AEROSOL AGE

THE MAGAZINE OF PRESSURE PACKAGING

IN THIS ISSUE:

- Schering's "Diloderm" Aerosol
- Aerosols and the FDA
- CSMA Meeting Reports
  - Pharmaceutical Symposium
  - New Corrosion Data
  - Butane-Propane Propellants
  - Aerosol Powders
- FEA Meets in Dusseldorf
- CSMA Aerosol Product Survey
- New Insecticide
- SCC, TGA Meeting Reports

JUNE, 1960

JUMP AHEAD
OF COMPETITION

WITH AEROSOL PACKAGING BY STALFORT

The economy of our high speed lines, (150,000 units per shift) plus tremendous warehouse space to hold the filled containers for drop shipments, has led many of the nation's leading brand names to move to Stalfort.

A completely glass enclosed all stainless line for loading food or pharmaceutical products, even powders, under sanitary conditions; is now in operation.

Your inquiries for private label packaging, in aerosol or conventional containers, for production or test runs are invited.

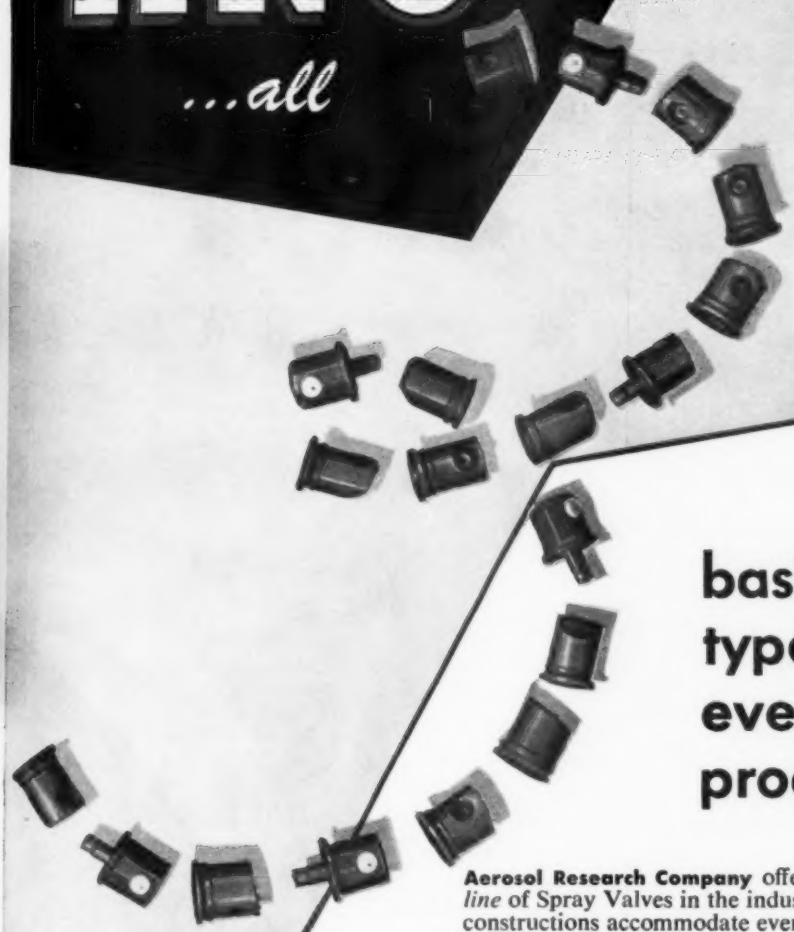
JOHN C. STALFORT & SONS, INC.

319 W. Pratt Street, Baltimore 1, Maryland • *Manufacturing Chemists Since 1868*

Only from

A·R·C

...all



basic spray valve types to package every aerosol product!

Aerosol Research Company offers its customers the *most complete line* of Spray Valves in the industry. Our *three* basic valve constructions accommodate every general type of aerosol product —whether for spray, foam, or other use.

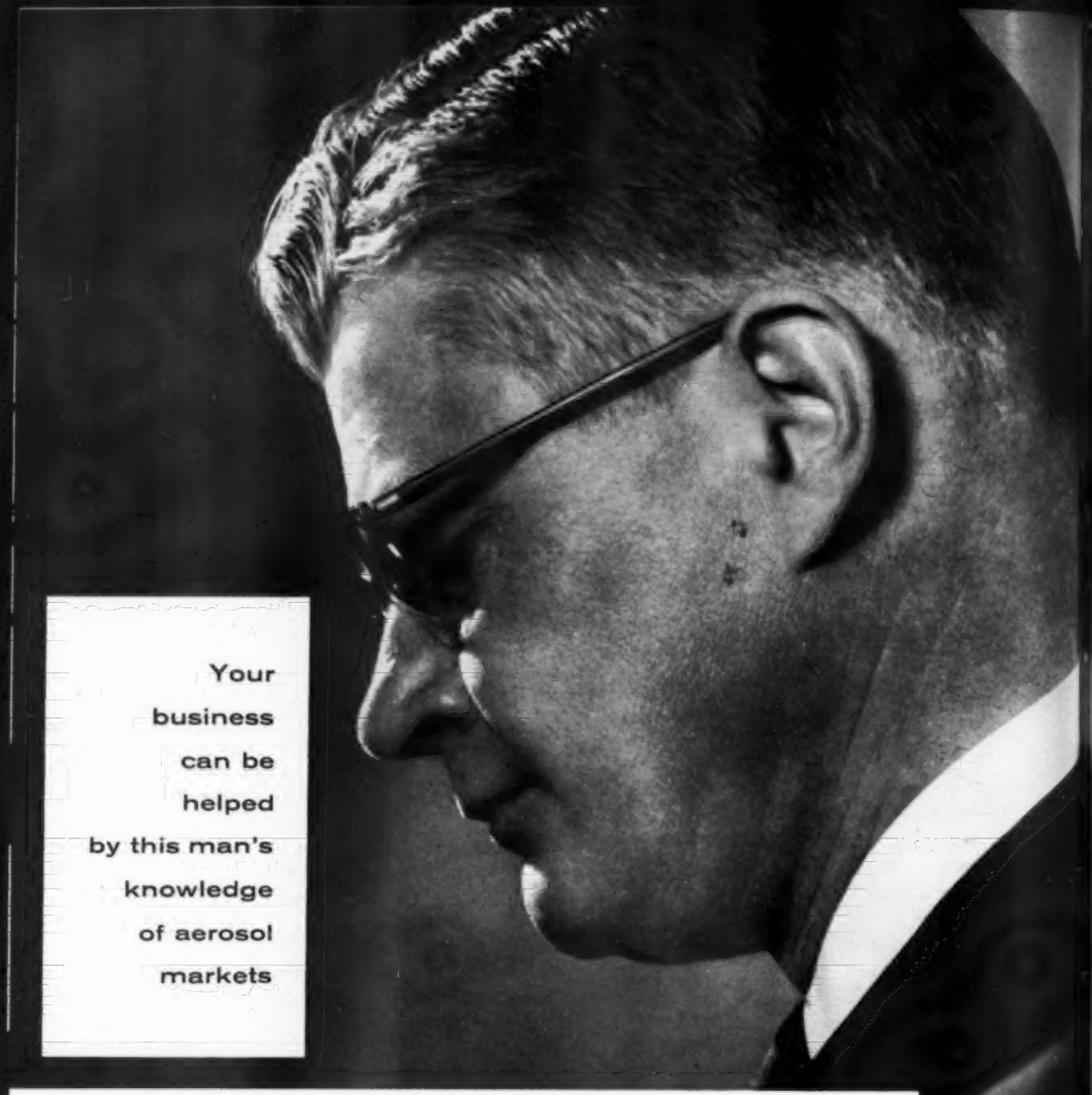
These three basic designs can be multiplied into literally *hundreds* of individual variations, merely by combining different stock components. The result is a *customized* spray valve, *exactly suited to* the specific product, propellant, and container involved. This "customizing" service is A-R-C's major contribution to increased efficiency—at no increase in cost—in the performance and sales reception of any aerosol package.

Write, wire, or phone today for information on A-R-C "Customized" Spray Valves for your product

Aerosol Research Company

743 South Circle Avenue • Forest Park, Illinois
Phone: FOrest 6-4880 • Cable Address: AERESCO

Licensees in: Crèteil (Seine), France • Barcelona, Spain • Mexico, D. F.
Nürnberg, Germany • Bournemouth (Hants), England



He is Du Pont's Ralph Crane . . . and his job is Market Research Manager of their "Freon" Products Division. From the industry's most comprehensive background of market research, his knowledge is available to help you locate marketing opportunities for your aerosol products.

Since 1947, the "Freon" Products Division has made 23 national surveys for the aerosol industry. These surveys include 17 studies of consumer knowledge, use and opinion and 6 studies of dealer practices and opinion of aerosol products. This continually growing fund of information is available to help you plan your aerosol marketing efforts.

The results of Ralph Crane's work are just one of many services available to users of Freon* propellents. The Du Pont service team includes experts in every area of aerosol planning, production and marketing. For more information call your Du Pont representative or write E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division, 2420N-324, Wilmington 98, Del.

FREON®
PROPELLENTS

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

*Freon and combinations of Freon- or F- are Du Pont's registered trademarks for its fluorocarbon propellents.

JUNE, 1960 VOL. 5, No. 6

AEROSOL AGE

The magazine of pressure packaging

THIS MONTH'S COVER

Still another means of insuring against package tampering by customers in self-service retail outlets is this new "Vexar" plastic netting developed by the Film Department of DuPont. The new netting, available in a wide variety of mesh sizes and designs, also serves to glamorize the conventional aerosol can. It is applied over the top of can and shrink sealed at bottom by a jet of hot air. The netting is more fully described on page 63.

Feature Articles

AEROSOL PHARMACEUTICAL MARKET CALLED "STILL FAR BELOW" POTENTIAL 22

INTRAVENOUS MEDICATIONS PRACTICAL IN AEROSOL FORM, SAYS SCIARRA 23

MARKETER'S ROLE FOR AEROSOL DRUGS CALLED HIGHLY COMPLICATED 24

FILLER CREDITED WITH MAJOR PHARMACEUTICAL ROLE..... 24

STERILE FILLING INSTALLATION DESCRIBED BY LEDERLE SPEAKER..... 25

BUTANE-PROPANE PROPELLANTS, NEW CORROSION STUDY REPORTED ON AT CSMA..... 26

DEVELOPMENT OF THE DILODERM FOAM AEROSOL..... 27

NEW DRUG APPLICATIONS FOR PHARMACEUTICAL AEROSOLS..... 30
By Julius Hauser

FEA MEETS IN DUSSELDORF..... 36
By Dr. Tom C. Clark

INTERPACK 1960 ..... 36D
By Dr. Tom C. Clark

SOCIETY OF COSMETIC CHEMISTS, TOILET GOODS ASSN. MEET IN NEW YORK 38

CSMA'S '59 AEROSOL PRODUCT SURVEY SHOWS CONTINUED GAIN... 41

PRENTISS DESCRIBES NEW INSECTICIDE..... 44

Departments

IN THE SPOTLIGHT THIS MONTH..... 10

INDUSTRY MEETING CALENDAR..... 10

NEW PRODUCTS AND PACKAGES..... 36C

AEROSOLS IN REVIEW..... 48

NEWS OF PRESSURE PACKAGING..... 51

EQUIPMENT, PROCESSES & BULLETINS..... 60

CUSTOM FILLERS AND PACKERS..... 75

NEW PATENTS 81

CLASSIFIED ADVERTISEMENTS 83

INDEX TO ADVERTISERS..... 85

OVER THE TRANSOM..... 86

Wayne E. Dorland
Publisher

Donald A. Davis
Editor

Eleonore T. Kanar
Technical Editor

Tom C. Clark
European Representative

Ralph Dorland
Advertising Manager

District Managers
Roger Appleby
William Ryan

Doris Metz
Circulation

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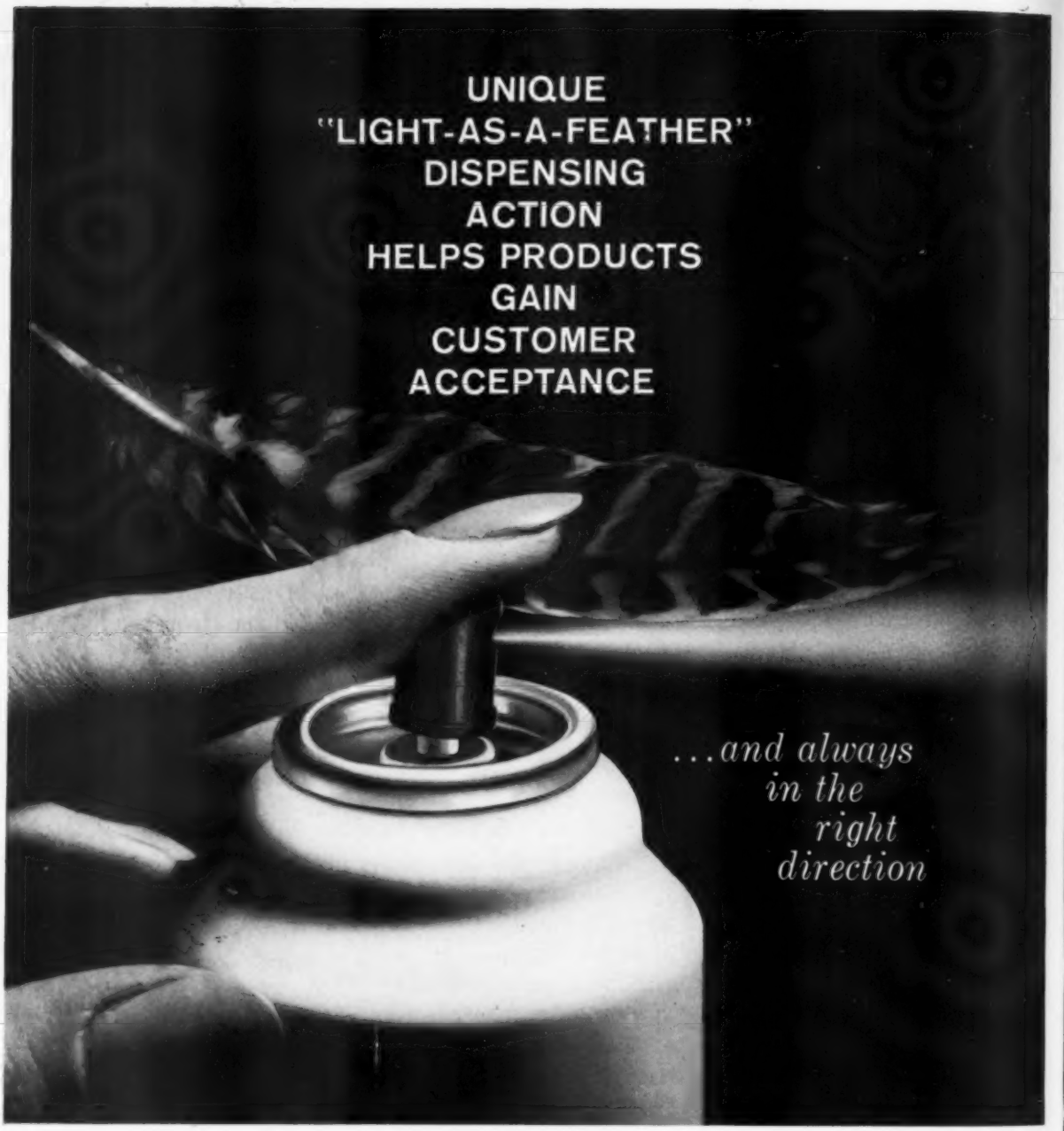

Every part except the dip tube is engineered and produced right in the completely equipped Schrader plant. Exceptionally easy toggle action is a typical result of Schrader's leadership in the engineering of quality pressure-handling apparatus. Schrader will design valves to dispense your product most efficiently. We will be pleased to help you from initial product analysis through mass production of the valves that actually will build customer acceptance for your product.

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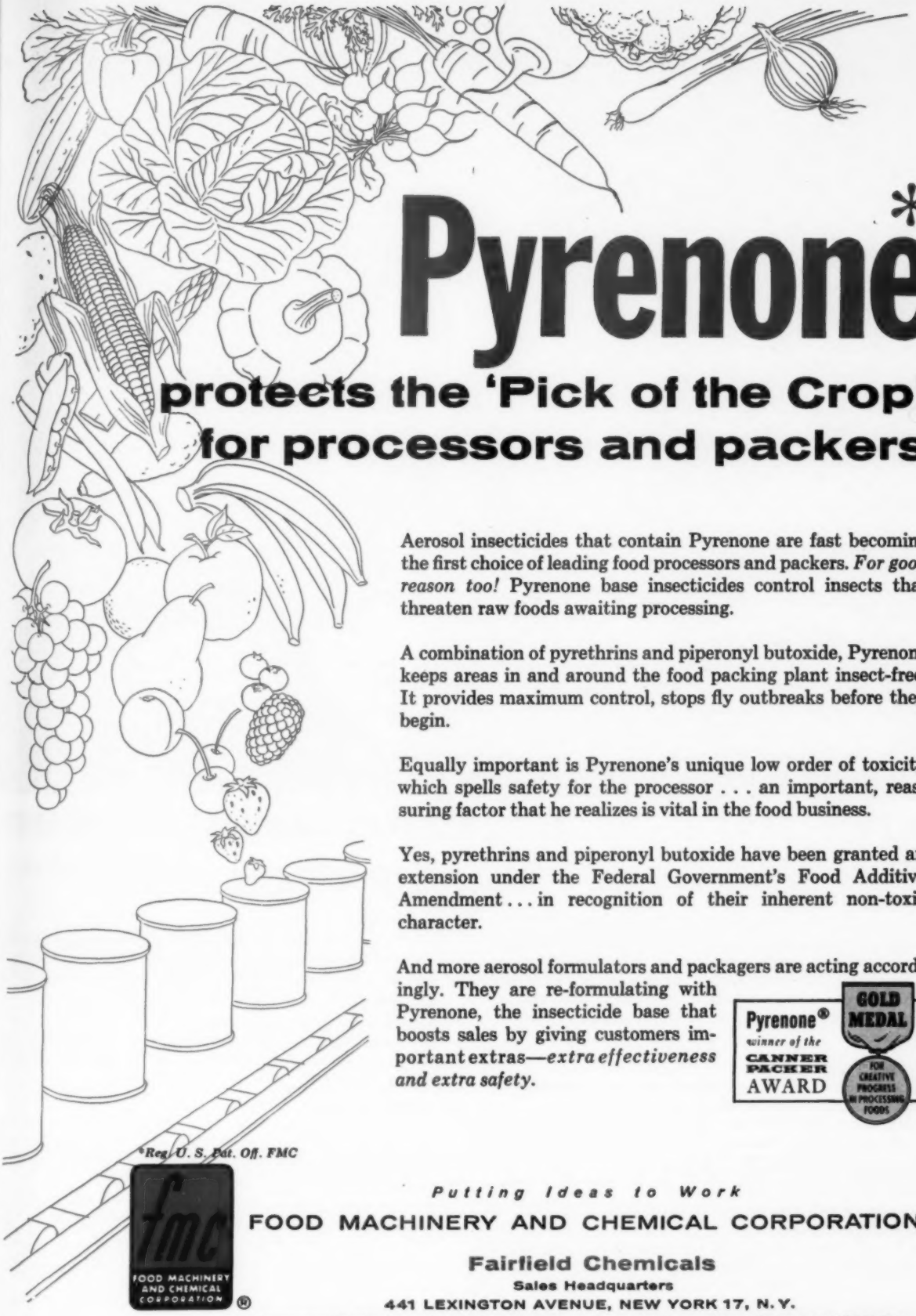
a division of SCOVILL

Aerosol Valves

A. SCHRADER'S SON, *Division of Scovill Manufacturing Company, Inc.*, 470 Vanderbilt Avenue, Brooklyn 38, N. Y.



Pyrenone*

protects the 'Pick of the Crop' for processors and packers

Aerosol insecticides that contain Pyrenone are fast becoming the first choice of leading food processors and packers. *For good reason too!* Pyrenone base insecticides control insects that threaten raw foods awaiting processing.

A combination of pyrethrins and piperonyl butoxide, Pyrenone keeps areas in and around the food packing plant insect-free. It provides maximum control, stops fly outbreaks before they begin.

Equally important is Pyrenone's unique low order of toxicity which spells safety for the processor . . . an important, reassuring factor that he realizes is vital in the food business.

Yes, pyrethrins and piperonyl butoxide have been granted an extension under the Federal Government's Food Additive Amendment . . . in recognition of their inherent non-toxic character.

And more aerosol formulators and packagers are acting accordingly. They are re-formulating with Pyrenone, the insecticide base that boosts sales by giving customers important extras—*extra effectiveness and extra safety.*

Pyrenone® *winner of the* CANNER PACKER AWARD — GOLD MEDAL — FOR CREATIVE PROGRESS IN PROCESSING FOODS

*Reg. U. S. Pat. Off. FMC

Putting Ideas to Work

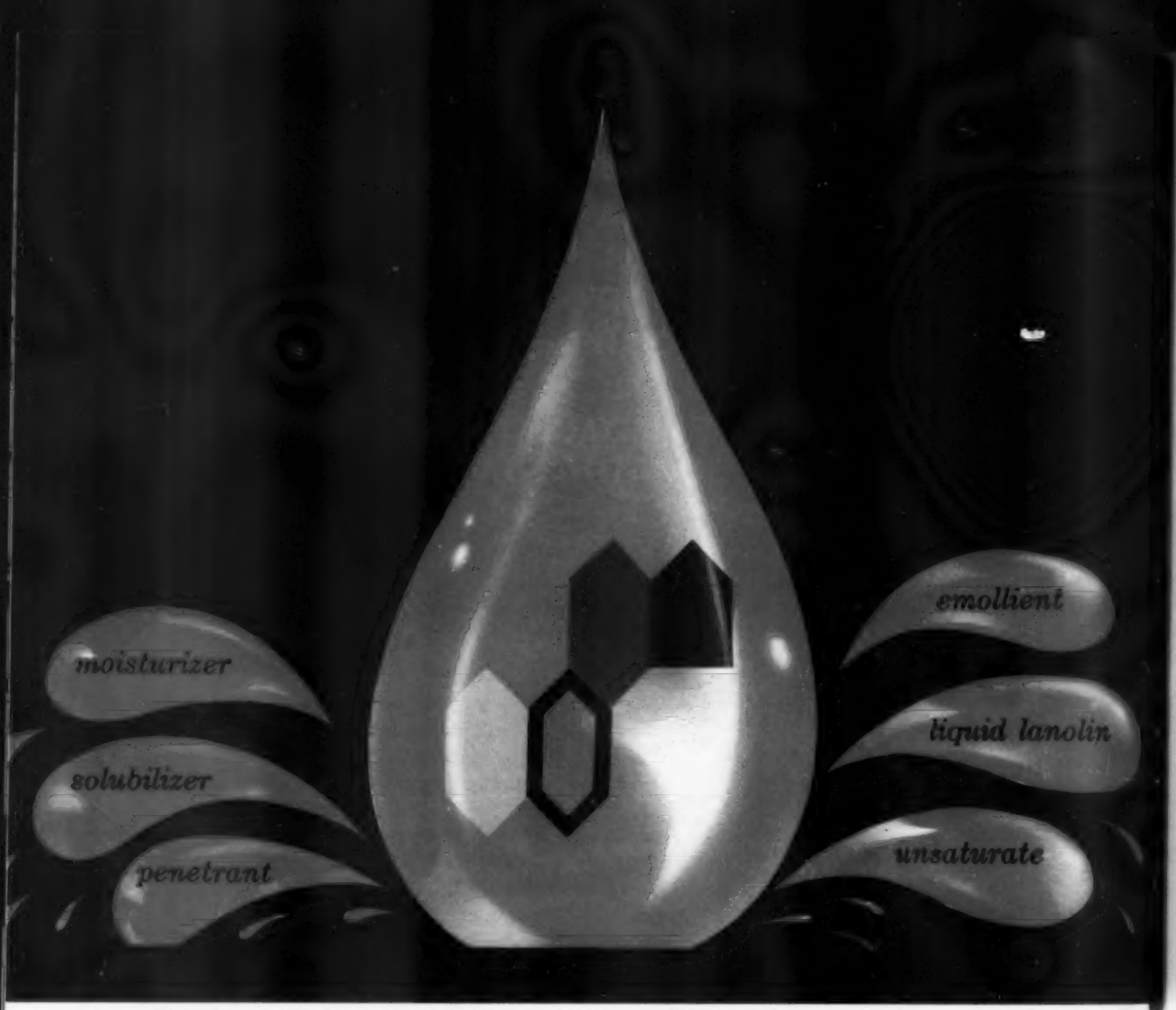
FOOD MACHINERY AND CHEMICAL CORPORATION

Fairfield Chemicals

Sales Headquarters

441 LEXINGTON AVENUE, NEW YORK 17, N. Y.

Branches in principal cities. In Canada: Natural Products Corporation, Montreal and Toronto.



AMERCHOL Lanolin Derivatives

add specific new functional properties to lanolin's most active components

AMERCHOL Derivatives and lanolin do have a common denominator, but the similarity ends there. AMERCHOL Derivatives add special properties and specific functional effects to lanolin's most active components. These unusual materials provide the formulating chemist with valuable new tools for producing superior cosmetic and aerosol products.

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AMERCHOL L-101®—powerful *free-sterol* depressant of interfacial tension. Excellent auxiliary emulsifier. Adds gloss, soft textures, and superb emollience to formulations and imparts valuable moisturizing effects to the skin.

solubilizer

SOLULANS®—*ethoxylated derivatives.* Water soluble, yet emollient! Solubilizers of great general utility. Impart excellent plasticizing, lubricating, and conditioning qualities at low concentrations.

Complete technical data, samples and suggested formulas are available from our research laboratories.

penetrant

ACETULAN®—*acetylated lanolin alcohols.* Non-oily hydrophobic liquid emollient. Penetrates and lubricates leaving a persistent soft after-feel that is truly remarkable.

emollient

MODULAN®—*acetylated lanolin.* Our own patented product. An unusual hypo-allergenic emollient. Non-tacky, oil soluble, and hydrophobic. Excellent for emulsions, soaps, baby oils, and brilliantines.

liquid lanolin

VISCOLAN®—*dewaxed lanolin.* Supplies all the natural benefits of lanolin in intensified, convenient liquid form. Oil-soluble, low odor and color.

unsaturate

POLYLAN®—*essential polyunsaturate.* Liquid *wax ester.* Combines the natural benefits of linoleic acid with the softening, protective, and conditioning properties of lanolin's most active components.

Amerchol

AMERICAN CHOLESTEROL PRODUCTS, INC.

Amerchol Park • Edison, New Jersey

MAN! AM I RELAXED!!

ALL RELAXED and rarin' to go – go – go! How come? Simple, man – simple! Just turned all my perfume problems over to FRITZSCHE's multi-man team of fragrance specialists. From now on I'm letting them do the worrying for me. Of course, they're all experts and what would be a real lying-awake-nights problem to me, is just like A-B-C to them. They'll not worry, because with all their experience, they'll be able to produce effective results easily – results that will make *my* products S-E-L-L! And if you don't think that's a great big load off my mind . . . Man, I'm telling you!

FRITZSCHE BROTHERS, Inc.

76 NINTH AVENUE · NEW YORK 11, N. Y.

Branch Offices and *Stocks: Atlanta, Ga., Boston, Mass., *Chicago, Ill., Cincinnati, Ohio, Greensboro, N. C., *Los Angeles, Cal., Philadelphia, Pa., San Francisco, Cal., St. Louis, Mo., Montreal and *Toronto, Canada; *Mexico, D. F. and *Buenos Aires, Argentina. Plants: Clifton, N. J. and Buenos Aires, Argentina.

INDUSTRY MEETING CALENDAR

Society of Cosmetic Chemists, Chicago Chapter, monthly meeting, Henrici's Restaurant, Chicago.....June 14

Chemical Specialties Mfrs. Assn., first annual golf outing, Knollwood Country Club, White Plains, New York.....June 16

Toilet Goods Association, annual convention, Poland Spring House, Poland Spring, Me.....June 26-30

Western Packaging and Materials Handling Exposition, Pan Pacific Auditorium, Los Angeles.....July 19-21

Chemical Exposition U.S.A., 1960, Statler-Hilton Hotel, New York City .....Sept. 3-15

Society of Cosmetic Chemists, annual seminar, The Drake Hotel, Chicago. .....Sept. 15-16

Chemical Specialties Mfrs. Assn., Meeting of Board of Governors, Division Executive Boards, and Committees, Hotel duPont, Wilmington, Del.....Oct. 3-5

French Packaging Institute, First International Packaging Machinery Show, Paris, France.....Oct. 14-23

Canadian Manufacturers of Chemical Specialties Association, 3rd annual convention, Queen Elizabeth Hotel, Montreal....Oct. 24-26.

National Paint, Varnish and Lacquer Association, 73rd annual meeting, Drake Hotel, Chicago.....Oct. 27-29

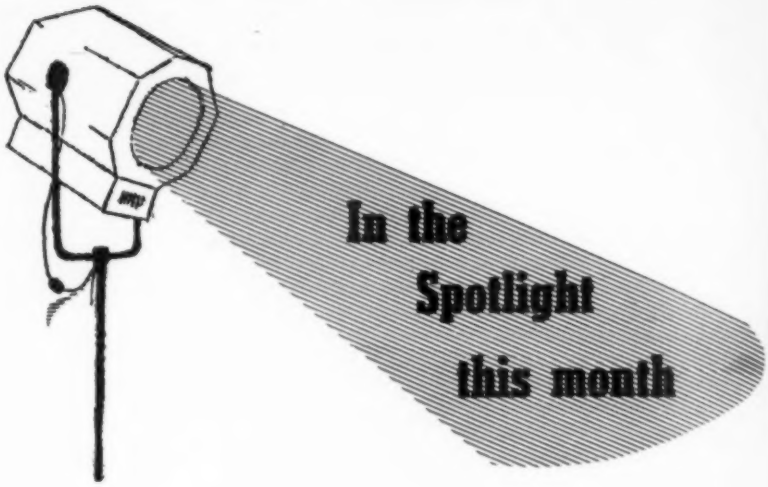
Toilet Goods Association, scientific section, fall meeting, Waldorf Astoria Hotel.....Nov. 30

Chemical Specialties Manufacturers Assn. 47th annual meeting, Hollywood Beach Hotel, Hollywood, Fla. .....Dec. 3-9

•

Crown Names Siebert

Crown Cork & Seal Co., Philadelphia, last month announced the election of Robert J. Siebert as vice-president. From Crown's San Francisco headquarters, he will direct all the company's manufacturing and sales activities in the Western states. Since joining the company in 1941, Mr. Siebert has held several sales positions, including field sales and as manager of several districts and regions.



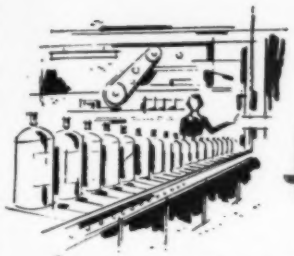
• **CSMA's Pharmaceutical Symposium . . .** Three leading authorities from the pharmaceutical field (Schering, Lederle, and St. John's University), together with two aerosol industry experts, give a detailed analysis of just how important quality control, exactly metered dosages, sanitation procedures, and other vital factors are in developing and successfully marketing aerosol pharmaceuticals. A summation of each of the five papers begins on page 22.

• **Schering's "Diloderm" Foam Aerosol . . .** This article, on page 27, actually traces the many steps necessary to develop each of the package components and the product ingredients of the dramatic metered foam product which was featured on *Aerosol Age's* cover for May.

• **Aerosols and the FDA . . .** In this important paper, the final of some 14 pages on pharmaceutical aerosols in this issue, Julius Hauser of the Food and Drug Administration, explains how an aerosol pharmaceutical may become a "new drug" if it offers a new use for an older product. The first of his two-part article appears on page 30.

• **The 1959 Aerosol Product Survey Reveals New Gains . . .** The most important single survey in the aerosol industry, complete with listings of all significant product types, begins on page 41.

• **FEA Meets in Conjunction with Interpack at Dusseldorf . . .** This double-barreled report on the recent meeting of European aerosol associations, together with a summary of important exhibits at one of the world's largest packaging shows, is an *Aerosol Age* exclusive appearing on page 36.



Here's proof-by-Comparison

why more and more aerosol manufacturers are using

NEWMAN-GREEN AEROSOL VALVES

You get eleven major aerosol valve advantages—four are exclusives—when you buy Newman-Green valves. No other aerosol valve in the industry has *all* these features in a single valve. Creative Newman-Green, Inc. engineering produced this simplified valve design to help you in selling more aerosol products. Give us a call today and let our engineering services and aerosol valves help you in designing and manufacturing an even better aerosol product.

	ADVANTAGES	Newman-Green Inc.	Company A	Company B	Company C	Company D	Company E
1	Pressure fills fast because it does not fill through metering orifices.	✓		✓			
2	All metering orifices in spray head easily accessible for cleaning.	✓	Exclusive Newman-Green Feature				
3	360° at spraying surface—twist top.	✓	✓		✓	✓	✓
4	No small orifices drilled in metal parts.	✓	Exclusive Newman-Green Feature				
5	Can be used on metal or glass containers.	✓	✓			✓	✓
6	Curved surface on spray button reduces finger fatigue.	✓		✓		✓	✓
7	Spray heads easy to apply after pressure filling.	✓					✓
8	Delivery tubes swedged on—not slipped over—valve body.	✓	Exclusive Newman-Green Feature				
9	Excessive swelling of gasket not detrimental to operation of valve.	✓				✓	✓
10	Spray pattern can be varied completely by changing only spray head.	✓	Exclusive Newman-Green Feature				
11	No dissimilar metals used in valve parts.	✓	✓				

NEWMAN-GREEN | *Creative Aerosol Valve Engineering*

151 Interstate Road, Addison, Illinois

Created to meet the exacting requirements of your product, propellent and container

MM&R flavors for aerosols

first

Ever since working with the largest supplier of aerosols to the United States Government, during the Second World War, MM&R has helped manufacturers in many industries to solve highly specialized flavoring and perfuming problems in the rapidly expanding aerosol field.

foremost

Fortified with unrivaled experience in the development of flavors for the food and other industries, MM&R is uniquely equipped to aid you in selecting a sales-stimulating flavor to meet every manufacturing requirement.

Write in strict confidence to - MM&R Technical Consulting Division (Aerosols). *There is no substitute for experience.*

MAGNUS, MABEE & REYNARD, INC.

Since 1895 . . . The World's Most Famous Supplier of Essential Oils, Basic Perfume Oils and Concentrated Flavors

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221 NORTH LASALLE STREET, CHICAGO 1, ILLINOIS

IF YOU ARE CONSIDERING AEROSOL PACKAGING FOR INCREASED PHARMACEUTICAL SALES...

PFIZER HYDROCORTISONE, NEOMYCIN, POLYMYXIN AND VITAMINS WILL INTEREST YOU!

Firmly convinced that aerosol dispensers can open new doors to pharmaceutical sales, Pfizer continues to cooperate closely with the pressure packaging industry.

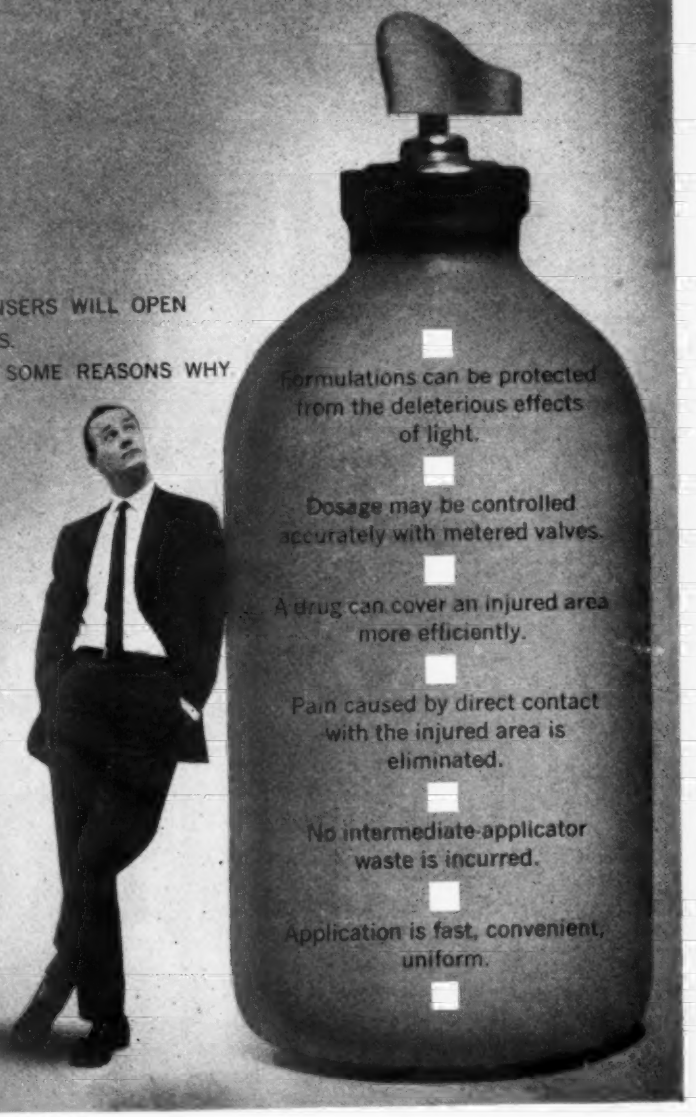
■ **The purpose:** To develop formulations that will permit pharmaceutical manufacturers to use most profitably the advantages inherent in pressure-packed containers.

■ **Typical findings:** Preparations utilizing Pfizer Hydrocortisone, Neomycin, Polymyxin and vitamins are enhanced by the natural ability of pressure containers to maintain formulations completely free from atmospheric contamination.

The stability of liquid vitamins is substantially increased because the preparations are overlayed by inert gas for the life of the container.

Write to Pfizer for reprints of the interesting report "Pressure-Packed Pharmaceuticals." Technical Bulletins on Pfizer Polymyxin, Neomycin and Hydrocortisone are also available on request.

PFIZER BELIEVES THAT AEROSOL DISPENSERS WILL OPEN NEW DOORS TO PHARMACEUTICAL SALES.
HERE ARE SOME REASONS WHY.



- Formulations can be protected from the deleterious effects of light.
- Dosage may be controlled accurately with metered valves.
- A drug can cover an injured area more efficiently.
- Pain caused by direct contact with the injured area is eliminated.
- No intermediate-applicator waste is incurred.
- Application is fast, convenient, uniform.

Manufacturing Chemists for Over 100 Years

Pfizer

Science for the world's well-being

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CHEMICAL SALES DIVISION
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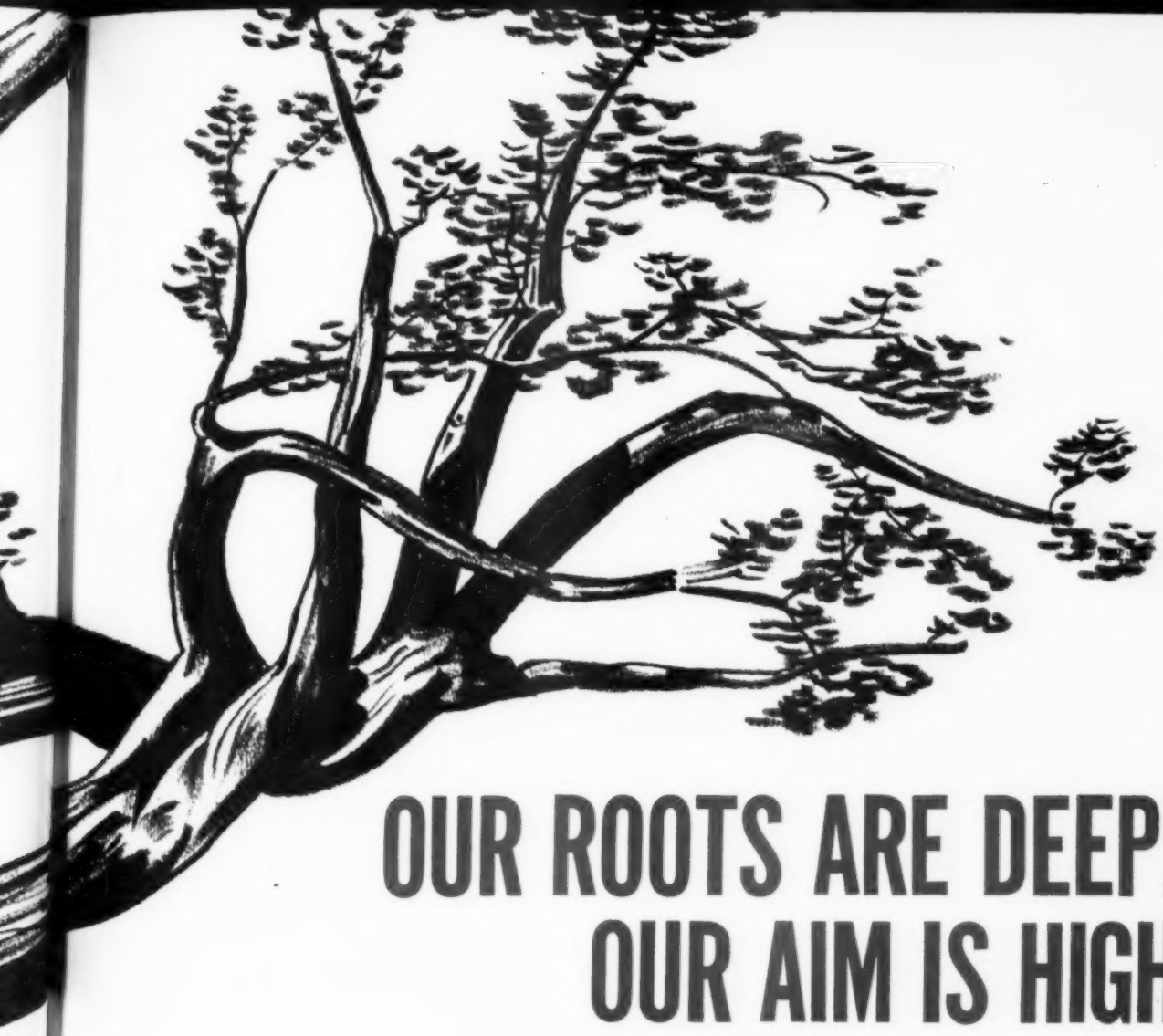


OUR ROOTS ARE DEEP, OUR AIM IS HIGH

but Valves don't grow on trees

Some fifteen years ago, the aerosol industry was born. Shortly after, the Precision Valve Corporation began. As the industry grew, Precision did too, in research, in discovery, in development.

Today, with over 500 employees and more than 60,000 square feet of manufacturing space devoted to over 10,000 different combinations of specifications for aerosol valves, Precision works with the industry to create and develop new aerosol designs to improve current procedures.

Now, on the threshold of further expansion, Precision rededicates itself to serving the aerosol industry and its customers. A major portion of Precision's new plant program will be directed toward research and development; its modern production facilities further improved; its friendly hand extended and dedicated to helping everyone.

Yes, Precision's roots are deep . . . its aim high!

PRECISION VALVE CORPORATION • 700 NEPPERHAN AVENUE, YONKERS, N.Y.

TONALID

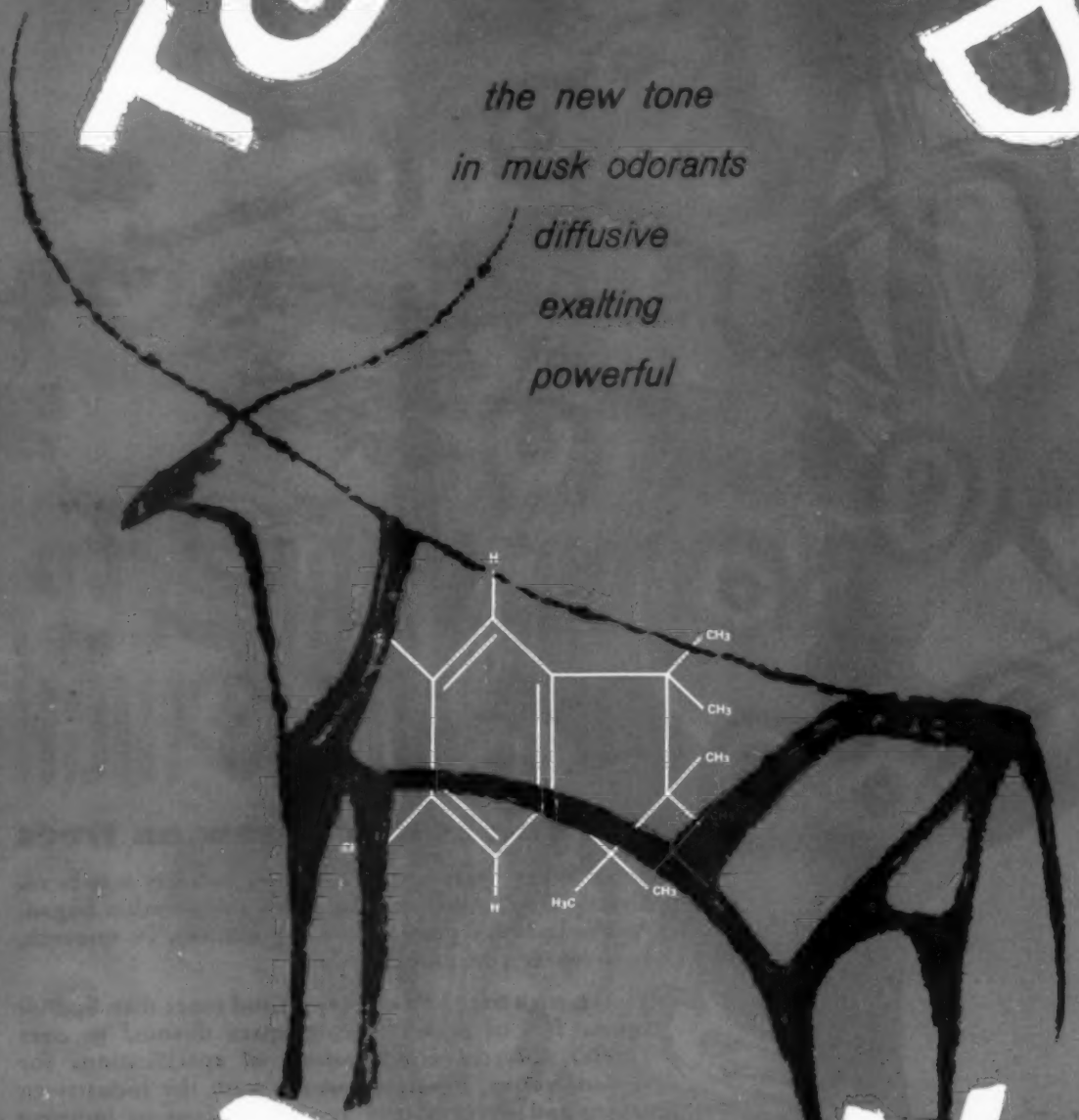
the new tone

in musk odorants

diffusive

exalting

powerful



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Out Front Again!

A BRAND NEW SERVICE

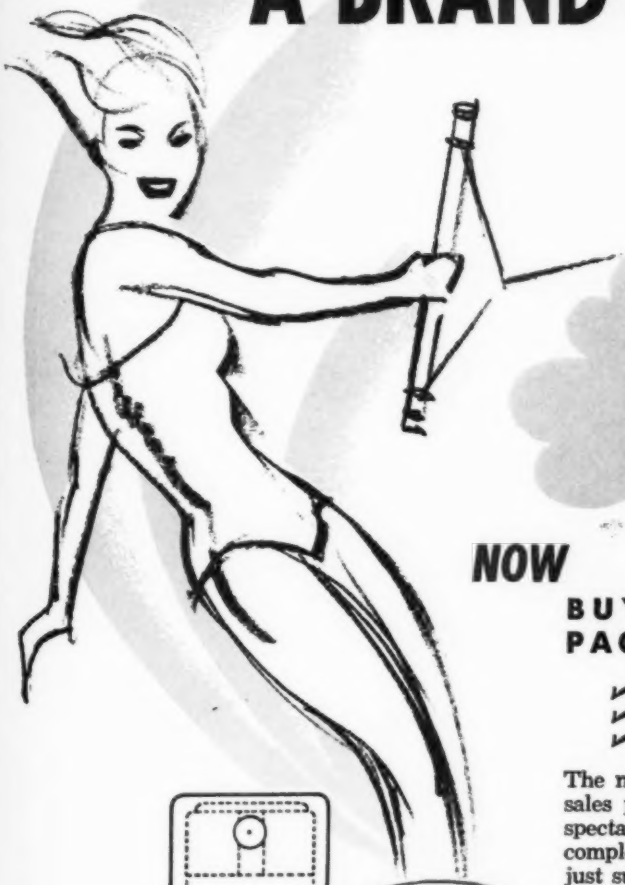
FROM

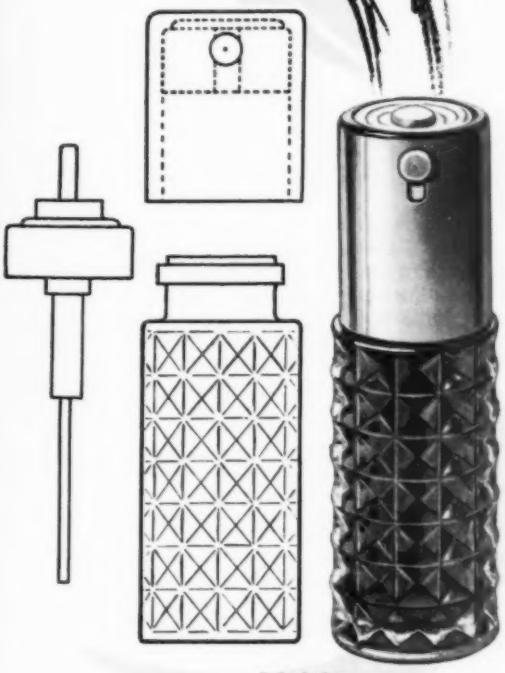
VCA

the metered

PURSETTE

package ensemble





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NOW

BUY A COMPLETE AEROSOL PACKAGE FROM ONE SOURCE

- UNCOATED AEROSOL GLASS BOTTLE
- "TRIGGER TIP" ACTUATOR
- VCA METERED VALVE

The new VCA metered PURSETTE package embodies sales producing advantages, low cost assembly and the spectacular successful "Trigger Tip" actuator. It is a complete package with one invoice, one delivery. You just supply the essential oils, filler and outer wrap.

This is it:

GLASS BOTTLE—Cut glass style bottle has a 12 cc overflow capacity. The head space is designed to be within the neck area of the bottle, so that it is not seen.

"TRIGGER TIP" ACTUATOR—One unit assembly. Immediate finger tip actuation without removing a separate overcap. Plastic components in all available colors.

METERED VALVE—VCA B18F Delrin or stainless steel stem with plastic tank and dip tube, plain aluminum ferrule. Meters over 200 shots when contents is ¼ fl. oz.

So, if you are looking for a low cost perfume package, look at the VCA PURSETTE, and be way out in front in sales.

SEND FOR FREE SAMPLES AND PRICES

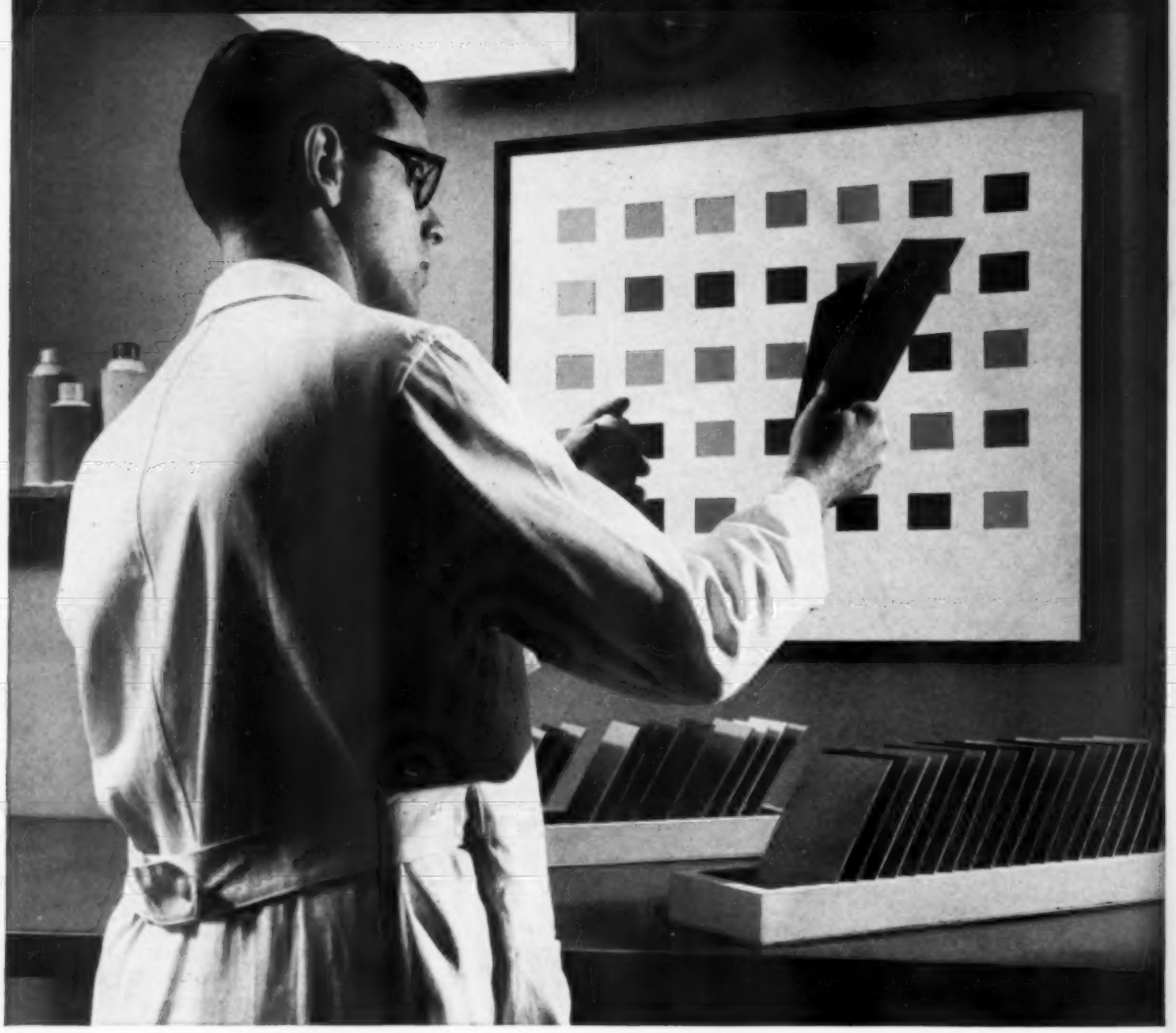
VCA INCORPORATED

CSMA

VALVE CORPORATION OF AMERICA, Inc.

1720 Fairfield Ave. • Bridgeport, Conn.

The contract packager had the answer... *another success story from the ISOTRON file.*



He adds the spray . . . takes nothing away

If you'd like to reach the vast aerosol market but fear your product might be changed too much in push-button cans, Sprayon Products, Inc., of Cleveland, may have good news for you.

Sprayon has aerosol-formulated thousands of successful specification finishes and products. Sprayon preserves the basic product characteristics you want . . . yet meets the demand of aerosol packages and market. A pioneer contract packager and producer of its own unique aerosol valve, Sprayon also works with marketers of many other household and industrial products.

Formulations are carefully coded and indexed for exact re-orders and the quality control section checks each order for color stability, consistency and other factors. Five filling lines are maintained, including many of the latest automatic innovations. Sprayon also offers customers a variety of sales and marketing aids.

Success of your aerosol product depends basically on choosing the right can, valve and propellent. On this score, a contract packager can give you expert advice. He may well recommend Pennsalt ISOTRON® . . . the extra-pure, extra-dry, factory-sealed propellents that power a host of outstanding aerosol products.

ISOTRON—*The Key To Modern Living*

Pennsalt Chemicals
ESTABLISHED 1850

Isotron Department 354
PENNSALT CHEMICALS CORPORATION
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Profit Package

for manufacturers

FITS ALL CANS

SNAPS ON IN SECONDS

REDUCES CUSTOMER COMPLAINTS

LOW COST

ACCURATE, EVEN SPRAY

No hand contamination from insecticides

Makes every amateur a professional spray painter

...FOR MORE EFFICIENT INDUSTRIAL APPLICATIONS
...FOR BIGGER RETAIL SALES

Now...aerosol product manufacturers of *industrial and commercial paints, insecticides, hair sprays, deodorants, household sprays,* etc., can be sure of *more sales* easier with the ALFCO Spray-Can Handle. Alert manufacturers everywhere are packaging and selling this sensational handle with every can. Customer complaints are reduced. Dissatisfied, one-time buyers are eliminated. Handles may be "private-labeled" in recessed portion of handle for close promotional tie-in with *your own* aerosol product. Handles are easily detachable for interchangeable use on other spray cans. For really big AEROSOL sales, investigate the "Profit Package" possibilities with the ALFCO Spray-Can Handle as a companion to your aerosol product.

Protect your reputation with quality—at low cost

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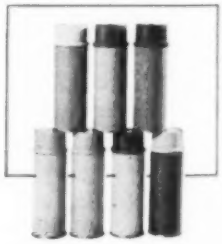

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EDITORIALS

Beginning With Fundamentals . . .

AS must be obvious to even the most pronounced skeptic, pharmaceuticals in aerosol form offer a tremendous market potential for suppliers and fillers alike. In fact, it isn't going too far out on a limb to predict that aerosols will be the dominant packaging form in the pharmaceutical field by the end of the 1960's—providing, of course, a better package isn't invented by that time. Even the traditionally cautious pharmaceutical marketers are actually becoming highly *excited* now about pressure packaging.

But any over-optimism by the aerosol industry *should* be tempered with a genuine respect for exactly what "getting into" the pharmaceutical product development will mean. On the following pages there are reports from some authorities on what is entailed in such a venture. The remarks by John Graham, of the Schering Corp., warrant especially careful analysis by aerosol suppliers and fillers. In his talk, Mr. Graham advises:

1. The filler will have to sustain the additional expense of separate pharmaceutical filling facilities, and in most cases will also have to reinforce his laboratory to gear it more closely to problems associated with pharmaceutical product development.

2. Valve suppliers will have to devote more efforts toward development of accurate metering valves for both compressed and liquefied propellants.

3. Container manufacturers will have to consider smaller-sized cans and other containers.

4. Closure manufacturers will have to develop pilfer-proof closures for the more potent drugs.

Perhaps it should be said at this point that a number of major custom fillers have already set up separate pharmaceutical facilities, and that the valve designers have improved metering devices at least in the developmental stages. But is the industry actually ready to submit to the considerable demands bound to be imposed on it by a pharmaceutical industry which has spent several decades evolving established standards of sanitation, product purity, accuracy of dosage, etc.?

Take the case of the custom filler. His knowledge of filling techniques, containers and other components, as well as product development requirements, will all stand him in good stead in recruiting new pharmaceutical customers. But from the elementary basics of say, sanitation, is he really ready?

Theoretically, every aerosol line should be cleaned up thoroughly at the end of each day's operations. In general appearance the line should give every indication of strict maintenance of neatness and quality of operation. Products with pronounced chemical differences (paints and cosmetics, for instance) should never be filled either on the same line (without shut-down and clean up) or on adjoining lines (without adequate precautions).

All these practices are fairly simple fundamentals which good sense would indicate will impress the filler's customer. Many of the more reputable filling companies do have strict rules on such matters, and these rules even specify exactly what cleaning agents are to be used and how long the clean-up job is to take.

But despite all these good intentions, there *is* evidence that some fillers are falling down on good housekeeping. Piles of rags, sloppy floors, insufficiently cleaned equipment, aren't rare

(*Continued on Page* 50)

Top row: John Graham (Schering) and Carl Stearns (Lederle); Paul Kemper (DuPont) and Walter Beard (Risdon); Albert Mason (Stalfort) and Paul Sanders (DuPont). Second row: W. W. Wolfe (Owens-Illinois) and Norman Ludwig (Ludwig Closures; John Hulten (Union Carbide) and Ed Bennett (Fluid), Mason Pilcher (Battelle Institute) and Robert Foresman.

CSMA Meeting Report

Aerosol Pharmaceutical Market Called "Still Far Below" Potential

AEROSOL pharmaceutical marketers can either rely on aerosols to "sell themselves on their own merits" or, through progressive marketing, advertising and promotion, they can help them to become at least a $200 million market within the next decade. This statement was made in a paper describing the "Market Potential for Pharmaceutical Aerosols," by Henry Holloway of the General Chemical Division of Allied Chemical Corp., Morristown, N. J., to the Aerosol Division of the CSMA at the association's mid-year meeting in Chicago May 16-18.

Mr. Holloway acknowledged that such a choice has become familiar to the aerosol industry, "since virtually all product groups have passed this point." The choice, he said, for the aerosol pharmaceutical people is "whether to let their product continue to grow at its present fairly impressive rate or to get behind it and help it up to the tremendous potential sales rate of which it is capable."

Mr. Holloway emphasized that aerosol pharmaceuticals are still "way below" their potential. "The estimated $20 to $25 million registered in 1959 for aerosol pharmaceuticals represents only about 13% of its ultimate potential among proprietary topical drugs and pharmaceuticals. Based on a rather enthusiastic projection of past performance, it will be 1963 or 1964 until aerosols capture even 50% of their ultimate potential, which will be close to $200 million by that time."

"A $100 million aerosol pharmaceutical market by 1964 is not to be looked upon lightly, but it still *does not* represent the kind of growth of which aerosol products are capable. Growth curves of products such as hair sprays, room deodorants, aerosol paints and shave lathers have shown this to be true. However, behind the phenomenal growth of each has been a concentrated promotional effort on the part of the marketers. Such promotional efforts have not yet been made by the marketers of aerosol drugs and pharmaceuticals. The first one that does will reap increased sales benefits, as did the big promotional people on other aerosol product groups.

"To take the fork at the crossroads that leads to greater sales also leads to increased advertising and promotional expenditures. Not only must the general public be informed of the advantages and conveniences of aerosol pharmaceutical products but special emphasis must be placed upon

(*Continued on Page* 79)

Intravenous Medications Possible in Aerosol Form, Says Sciarra

A WIDE range of drugs can be successfully administered via aerosol administration into the respiratory system, Dr. John J. Sciarra of St. John's University College of Pharmacy told a special seminar on pharmaceutical aerosols at the May 17 session of the CSMA's Aerosol Division. In a paper on "Aerosol Inhalation Therapy" co-authored with Dr. Vincent de Paul Lynch, Dr. Sciarra declared that "any drug given by intravenous injection can, in most cases, be reformulated into a suitable aerosol, provided the drug is capable of being deposited in the respiratory tract and is non-irritating.

"Such drugs as epinephrine, isoproterenol, octyl nitrite, phenylephrine and ergotamine have been successfully formulated into liquefied gas aerosols and are used by inhalation. These products have met with a great deal of success and have been readily accepted by both physician and patient. There are many other drugs which can be applied in a similar manner. Penicillin, streptomycin and other antibiotics are capable of acting locally or systematically depending upon conditions. These antibiotics have proved their efficacy when administered with a nebulizer or other suitable means. It may be possible to suspend the finely subdivided antibiotics in the liquefied gas. This would have the added advantage of increased stability, since no water would be present which would accelerate the decomposition, especially of penicillin. Through use of a co-solvent the antibiotic may be brought into solution with a liquefied gas and administered as liquid particles rather than as solids.

"Other drugs which may prove more effective when applied as aerosols than when administered by other means may include antihistaminics, anti-infective agents, analgesics, antinauseant drugs, sterols, steroids, antitussive agents, hormones, cardiotonics, dieuretics and many others. Most of these drugs would require further study before they can be used as a liquefied gas aerosol. However, once their behavior in the liquefied gases is determined (solubility, stability, toxicity, etc.), they would be readily acceptable as aerosols."

Dr. Sciarra discussed in detail other modes of drug application and some of their shortcomings. For topical application, he pointed out that both "rate and amount of absorption would probably be rather small. This is readily understandable considering the physical barrier presented by the skin surface, and the fact that

(*Continued on Page* 78)

Barr to Head Aerosol Division

George Barr, president of G. Barr & Co., was elected chairman of the executive board of the CSMA's Aerosol Division for 1961. He succeeds E. J. McKernan of E. J. McKernan & Co., who will remain a member of the executive board for another year.

Other members of the board for 1961 will be D. J. Templeton (Stanley Home Products, Inc.), J. J. Tomlinson (General Chemical Division of Allied Chemical Corp.), Chris Cannady (Continental Filling Corp.), John Buchanan (Continental Can Co.) and Russell McGhee (Colgate-Palmolive Co.).

The speakers were (from top): Henry Holloway (General Chemical), John Graham (Schering), Carl Stearns (Lederle Laboratories), Dr. John Sciarra (St. John's University), Albert Mason (Stalfort), Montford Johnsen (Peterson Filling), Paul Sanders (DuPont) and E. E. Husted (Union Carbide).

Top row: Richard Gergle, Charles Todd, and Donald Francisco (Dow Corning); Fred Taylor (Lehn & Fink), Harry LaTousky (DuPont), Lew Otterson (Bernardin) and V. DeFeo (Dodge & Olcott). B. Sellinger (Colgate), A. Mackenzie (Kartridg Pak) and Phil Meshberg, (Emson Research). Second row: Ralph Legate (Precision Valve), Sandy Craige (Peerless Tube) and James Gottlieb (JG Machine). Richard Reavy (John Breck), Gordon Lang (Conn. Chem. of Canada), Fred Presant (ATI), and R. A. Fulton (USDA). Anthony Hersh (Knomark), Charles Wirth (DuPont), and Ed Budzilek (Wheaton.)

CSMA Meeting Report

Marketer's Role for Aerosol Drugs Described As Highly Complicated

IN THE pharmaceutical field, just as in any other, "when the aerosol is used as a gimmick, it will not sell," John Graham of the Schering Corp., Bloomfield, N. J., declared in a paper delivered to the special May 17 "Symposium on Pharmaceutical Aerosols" at the CSMA's mid-year meeting in Chicago. Acknowledging that aerosol pharmaceuticals "may never attain the volume of insecticides or hair sprays," Mr. Graham said they should nevertheless "provide a comfortable income to fillers, valve manufacturers and container manufacturers."

One likely explanation for the cautious approach to aerosols evidenced by the pharmaceutical marketer, he said, is that, in addition to the many problems normally encountered with the development of an aerosol, the pharmaceutical marketer must deal with the rigid controls of the Food and Drug Administration and the traditionally conservative methods of advertising and packaging. "We have to submit data to the FDA on stability, shelf life, effectiveness and side effects of the preparation, spray rate and delivery. Discussing these separately, I would point out that we must furnish data from our laboratories that both the active ingredients and the inert materials are stable for a period of time; also, that leakage of propellant is low enough so that less than 10% is lost over a stated period of time. If the material is stable for no longer than two years, or as much as 10% propellant is lost in two years, the label would have to carry a two-year expiration date. Because of the distribution system in depth that pharmaceutical companies use, prescriptions containing a two-year outdating would be uneconomical to produce. Therefore we look for a minimum of three-year shelf life.

(*Continued on Page* 77)

Filler Credited with Major Pharmaceutical Role

THE AEROSOL filler deserves a good deal of credit for those successful products already on the market, because he has "beaten a path" to the door of the pharmaceutical marketer, Albert Mason of John C. Stalfort & Sons, Inc., Baltimore, stated in a paper on "The Role of the Filler in Pharmaceutical Aerosols." "Good housekeeping and other sanitary procedures," he pointed out, are necessary in helping the filler convince the marketer that he and the industry have truly "come of age" for pharmaceuticals.

Mr. Mason declared that the responsible filler offers the marketer service, quality and versatility. "Developmental work in conjunction with the filler can be invaluable, because he can offer advice on propellant, valve and container selection, oven testing and shelf life, and expected product performance. This familiarization accomplished through use of the filler is especially important to both the new marketer and the marketer thinking about a new product."

The responsible pharmaceutical

(*Continued on Page* 77)

C. S. Stephens (American Can), Jack Ellis (Sprayon Products) and Charles Gray (Union Carbide). Paul Silverman (Helene Curtis), Carter LeBeau (Kartridg Pak) and Jack Ellis listen as E. E. Husted (Union Carbide) explains powder formulations. Harvey White (Puritan), Joe Dolson (Hercules Powder) and Ed Helfer (PowrPak).

CSMA Meeting Report

Sterile Filling Installation Described by Lederle Speaker

ATTEMPTS at sterile filling probably will involve more complications than the industry has hitherto realized, Carl Stearns of the Lederle Laboratories Division of American Cyanamid Co., New York, indicated at the Pharmaceutical Symposium of the CSMA's Aerosol Division. He described in detail the steps necessary to construct (and convert from a pilot line) a sterile filling line at his company's plant in Pearl River, N. Y.

The product he described, "Achrosurgic" spray, required sterilization of formulation, valve, container and propellant. Sterilization of the product, achromycin, was accomplished with ethylene oxide. The valves were also sterilized with this gas, in a special chamber for 16 hours, and then passed through an air lock under ultraviolet light. The containers were placed in an oven at 110° C. for 10 hours (after having been cleaned by air vacuum). The propellant was sterilized by means of a bacterial filter, which is changed every 8 to 10 hours.

Mr. Stearns then outlined the production facilities, which, he said, are contained in a special room 15 x 30 feet. Personnel must pass through a special dressing room, and when they have been gowned must then pass through an air lock. Caps, goggles, masks, gowns and special footwear are worn, and once the filling operation is begun, no one may enter or leave the room. Since the production is of necessity limited, a cold fill unit

(*Continued on Page* 76)

Top row: V. DiGiacomo (Givaudan-Delawanna), Frank Milo (Rhodia) and Curt Hollopeter (Owens-Illinois). Gus Lawrence (DuPont), Marion Meade (Chemweek), H. R. Shepherd (ATI), Dean Rockwell (Impact Containers), Ed Helfer (Powr-Pak), James Gottlieb (JG Machine), and Sylvan Lefcoe (Par). Lower row: Larry Carls (Velsicol), Paul Sanders (DuPont) and Ted Herst (Foster-Forbes). Bernard Sanders and Donald Peck (Fuller Brush) and Gordon Gilroy (Precision Valve). Jack Schlossman (Aerosol Research), Dave Tillotson (Pennsalt) and Otto Weil (Aerosol Research).

CSMA Meeting Report

Propane Called "Most Intriguing" of Liquefied Petroleum Gases

"PROPANE provides a complete spectrum of useful particle sizes within the low-pressure range," it was declared in a joint paper by John D. Besse, Franklin D. Haase and Montford A. Johnsen of the Research Department of Peterson Filling & Packaging Co., Danville, Ill., in a paper before the May 18 session of the Aerosol Division. Mr. Johnsen, who gave the paper, pointed out that "the particle size is extremely dependent upon the concentration of propane. Relatively low concentrations of propane provide distributions characteristic of very high concentrations of halocarbon propellants."

Of the three hydrocarbons which qualify as propellants (propane, isobutane and normal butane), the Peterson Filling researchers called propane the "most intriguing." They pointed out that "it is readily available in low-odor grades. Because of its high pressure, greater formulation latitudes are possible with propane and lower cost products can be obtained as a result." Because of these factors, they said, their paper was concerned mainly with the properties of this propellant, particularly in a three-component system of propane, propellant 11 and odorless mineral spirits.

Through use of graphs, the authors illustrated very accurate pressure determinations made in a wide variety of ways, and concluded, "These tests show that current ICC regulations limit the use of propane to 20% or less, depending upon the other components. Any combination of isobutane is permissible for shipping purposes, as far as the pressure is concerned."

In their studies to determine density, the authors concluded that, "because of the great volatility of propane, the hydrometer method of densimetric analysis is applicable only to formulations containing le than 20% propane at —20° F. Other determinations were taken hydrometrically at —50° F. by modifying the standard method so that the constant temperature jacket of boiling propellant 12 is replaced by boiling technical propane. Analyses at 70° F. and 130° F. were taken using graduated pressure tubes. The volume for a given net weight is compared against a standard, such as alcohol, and the density determined by ratio. In some of the 130° F. determinations the density was found by vol-

(*Continued on Page* 68)

Du Pont Chemist Reports Change in Container Corrosion Theory

CONTAINER corrosion occurring in many nonaqueous aerosol products containing alcohol and propellant 11 is due rather to a reaction between those two chemicals than to hydrolysis of the propellant (as was long supposed), Dr. Paul A. Sanders told the May 18 session of the CSMA's Aerosol Division at the CSMA midyear meeting in Chicago.

That explanation of a troublesome phenomenon that has cut the shelf life of many pressurized products and kept many otherwise successful aerosol formulations from getting past the laboratory stage, was offered in a paper titled "Mechanism of the Reaction Between Trichloromonofluoromethane and Ethyl Alcohol." Discounting a long-held theory that container corrosion is caused by acidity created by reaction of propellant 11 with moisture, Dr. Sanders pointed to recent experiments which indicate that hydrolysis of the propellant is slight and probably of little importance. Major cause of corrosion proved to be hydrochloric acid, formed in a free-radical reaction between propellant and ethyl alcohol.

Dr. Sanders acknowledged that the work stemmed from experiments conducted in Russia by Razuvaev and Sorokin in 1953, which showed that "When carbon tetrachloride and ethyl alcohol were heated, a reaction occurred with the formation of ethyl chloride, ethyl, ether, paraldehyde, chloroform, and hydrogen chloride. Subsequently, Razuvaev and his coworkers found that carbon tetrachloride and isopropyl alcohol reacted in

(*Continued on Page* 67)

Kinter Warns of Misleading Guarantees

THE MANUFACTURER or marketer will be exposed to a "constant temptation" to use a product guarantee in a manner contrary to the Federal Trade Commission regulations, Earl W. Kintner, chairman of the Federal Trade Commission, told a luncheon meeting of the CSMA at the association's mid-year meeting in Chicago on May 17. "The word 'guaranteed' flows easily off a salesman's tongue. Thus an insecticide manufacturer may claim that his product is guaranteed to kill all bugs. If the insecticide does not in fact kill all forms of insect life, then a misrepresentation has been made."

Mr. Kintner advised that the FTC rule is a simple one, "guarantee only

(*Continued on Page* 65)

Story of the development of an important new aerosol pharmaceutical:

Schering's Diloderm Foam Aerosol

written by the research and publicity staffs of Schering Corp.

Pharmaceutical Chemistry

Shortly after Schering Corporation scientists succeeded in developing dichlorosone, a steroid possessing excellent topical anti-inflammatory activity, the Pharmaceutical Chemistry Department was assigned the task of formulating conventional topical dosage forms and, at the same time, of considering a vehicle for the new agent.

An aerosol foam was selected as the companion product to the more conventional cream and aerosol. Such a product would embody all the advantages of the known topical dosage forms, such as ease of application, economy and therapeutic efficacy. Almost at once, Schering's pharmaceutical chemists began work with a basic, foam-type vehicle. Because preliminary experiments indicated irritation of inflamed and denuded areas with soap emulsions, and because of an indication of greater hormone stability in non-ionic systems, the bulk of work was concentrated on the latter type emulsions. The final product was the result of many trials.

Schering decided upon a relatively compact unit, one easily carried and handled by the patient. Because of this package size, a limiting device was desired to prevent over-dispensing. To assure dispensing of an effective, measured dosage, the metered aerosol valve was selected as the most practical device available.

Development and manufacture of the metered valve for the Schering package was assigned to Emson Research, Inc., Bridgeport, Conn., pioneer developer of the aerosol industry's first metered valve and subsequent creator of such aerosol package specialties as the stainless steel-bottle-and-valve combination, special oral attachments, replaceable cartridges for purse-size aerosol perfumes and, most recently, the nitrogen-metered valve. Emson's patented metered valve is now manufactured under license agreements by firms in the United States and overseas.

Working closely with Schering's packaging research and production personnel, Emson undertook to submit to Schering not only the valve and special actuator but a complete plastic outer-case as well. After making various plastic models of the outer container, Emson submitted to Schering the most suitable package from functional, pharmaceutical and appearance considerations. This package had to be one that could be easily used and have a pleasant feeling when handled.

Cost was important, too. The outer case had to be designed in such a manner as to permit a fast molding cycle and a thin wall, yet give the appearance of being a sturdy container. Because of the variances in the dimensions and tolerances of the plastic-coated bottle, the original design of the case had to be altered in a manner that would permit the bottle to be inserted properly.

Schering, meanwhile, was developing numerous formulations and screening them for chemical stability and skin-irritation properties. For each of these emulsions, it was necessary to adjust the ratio and quantity of propellants to give the desired foam properties. In addition, the emulsion concentrate is of such a nature as to emulsify readily the pro-

Schering's three "Dilolerm" packages include an aerosol spray, metered foam, and conventional cream.

pellant in itself "*in situ*." The foam, delivered to the site of application, is sufficiently stable to be rubbed in gently and yet is easily collapsible. Because of its larger bulk volume, the foam can be spread over larger areas than an equal weight of cream.

Although the technique of aerosol pressure filling is well known, relatively little has been published concerning highly accurate filling of small units. Because of federal regulations governing drugs, extremely close filling tolerances must be met. Every such requirement was met by the filler in a most satisfactory manner. Emson found that modifications of a minor nature in the valve assured proper charging of each unit.

Quality Control

Before "Diloderm Foam Aerosol" can be made available to the consumer, an elaborate system of checks and safeguards must be performed. Because of the reliance the physician and patient place on the drug manufacturer, every quality characteristic must be verified before the product is ready for the market.

Although quality control of "Diloderm Foam Aerosol" began in Schering's research and development laboratories in Bloomfield, N. J., it is maintained at the company's new $1.2 million Quality Control Center in Union, N. J., one of the most up-to-date facilities of its kind in the industry.

Prior to compounding and filling a batch of "Diloderm Foam Aerosol," the active ingredients, raw materials and package components must be thoroughly checked. Each of the ten raw materials and active ingredients are analyzed in testing laboratories to insure proper identity, strength and purity. The materials must meet the rigid specifications set by Schering and the *United States Pharmacopeia*. Each of the several package components are likewise checked for quality. The esthetics of each component, along with their dimensional and functional characteristics, are checked for strict conformity to specifications. After the batches of raw materials, active ingredients and package components have been certified by Quality Control, "passed" labels are issued and affixed to the certified lots.

Before a batch of the Diloderm product can be compounded, a batch number is issued which will ultimately appear on each finished package. By referring to the batch number Schering can trace the complete history of a batch. Once the batch number has been assigned, the Diloderm foam concentrate is compounded. After production of the concentrate, a representative sample is withdrawn and submitted to the control center for complete analysis, including an assay of the active ingredient. When certified by Quality Control, "passed" labels are issued and affixed to the containers.

The passed concentrate is then eligible to be transferred to the mixing tanks on the filling line. Since a proper degree of agitation is essential, the concentrate must be sampled and analyzed once more to insure its homogeneity. Once certified, the filling operation may start.

DURING the filling operation a whole new series of in-process controls are performed. Each filled container is checked in a hot water bath at 130° F. for five minutes for the presence of leakers. Fill checks on both concentrate and the propellant are performed on the production line every ten minutes. These checks and the many others are performed to insure the highest possible quality attainable.

At the conclusion of the filling operation, representative samples are once more withdrawn for submission to the control center. In addition to a complete chemical analysis for identity, strength and purity, a safety toxicity test is performed on the finished "Diloderm Foam Aerosol" batch. While the final analysis and toxicity tests are being run, the batch is delivered to the Quality Control inspection area for a *terminal audit*. The audit includes a check for physical attributes, workmanship and conformance to package specifications.

All test results, inspection reports, control charts and the batch record are channeled to the Quality Control office. Collectively, the documents form the complete history of "Diloderm Foam Aerosol." When all requirements have been met, the batch is released, but this does not end Quality Control's vigilance. File samples of each batch and product stability samples are maintained for periodic checks in a never-ending effort to improve products.

Close-up of bottle and valve without outer plastic cover.

Purchasing and Packaging

The responsibility of Schering's purchasing department in the development and production of the product has included the selection and approval of suppliers and coordinating their efforts with the company's own production personnel. The buyer of packaging materials and services is also chairman of the company's packaging committee, which facilitated many problems of coordination.

By long-standing agreement, the initial contacts with potential package suppliers and contract fillers were made by development personnel working with the Purchasing Department, which entered the negotiations as soon as the time came for discussion of prices and final commitments. Thus Purchasing was able to provide management with a running estimate of total costs as the project progressed.

Product, dosage and filling requirements were major factors in the selection of a valve supplier. Schering felt that Emson Research was fully qualified to provide a valve capable of fulfilling the specific performance requirements, and researchers of both companies worked in close harmony from the earliest stages of development. The design of the aerosol bottle, actuator and plastic case and cover was submitted by Emson and adopted by Schering's Packaging Committee with very few changes.

Actually, Emson was able to "anticipate" some of the problems associated with the package in its early consultations with Schering. The valve used on the finished product, for instance, is only a slight modification of the standard Emson metered valve. Two accurately placed holes are made on the bottom portion of the specially constructed stainless steel stem to permit the liquefied propellant to be pressure filled.

Emson also was given the problem of production of the outer case, which presented a few additional problems. For the Schering product, it was desirable to make as thin a wall as possible; first, to keep the cost down, and, second, to make a better-looking package. Because the length of the tube was so deep, it required extreme care and concise production and mold making. Another problem was the method of securely holding the bottle in the case. A simple method was devised, whereby a special collar was adapted. Though it does the job perfectly, Emson designers have devised another method which will be used, and that is to replace the collar with a cap which will fit directly onto the valve. It will make a better fit, eliminate another handling operation and give the bottle a tighter fit in the case.

The plastic-coated bottles, in which the product is contained, were provided by Wheaton Plasti-Cote Co., Millville, N. J. And the balance of the packaging materials were routinely designed and ordered.

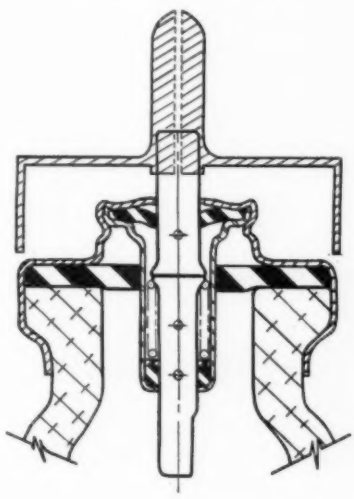
The choice of a contract filler became somewhat involved, because one filler with whom Schering has always enjoyed an excellent working relationship (and who fully understands Schering's quality requirements) did not have the equipment to handle the new package on an automatic, relatively high-speed basis. Although this company was willing to install the equipment (and subsequently has), the Purchasing Department committed the final development and the initial production orders to Armstrong Laboratories, West Roxbury, Mass.

Since the component parts of the basic package were being manufactured in two locations in Connecticut, as well as in New Jersey, and because they had to be carefully checked by Schering's Quality Control laboratories in Union, N. J., logistics became an important consideration. Valves and actuators are shipped directly to Union for testing and, if accepted, are reshipped to Armstrong Laboratories. Economy reasons make it necessary for the bottles, cases and covers to be sent directly to Armstrong, which samples the shipments by means of Schering's established statistical plan. Bottle samples are sent to Union for Quality Control clearance.

Sampling and inspection of the plastic cases and covers posed an additional problem, because considerations of molding left no time for an exchange of statistical samples. Instead, the molder withdraws one "heat" (12 cases and 12 covers) every four hours. These are marked with time and date, and forwarded to Quality Control. The cartons of production cases and covers are marked by date, numbered sequentially and sent to Armstrong. Thus, if a rejection is to be made on the basis of one or two of the samples received in Union, the amount of material actually returned to the molder is restricted to the periods involved. In addition, Armstrong inspects incom-

(*Continued on Page* 69)

Cross-section drawing of the foam metering valve.



New Drug Applications for Aerosol Pharmaceuticals

By Julius Hauser*
Assistant to the Medical Director
Bureau of Medicine
Food & Drug Administration
U.S. Department of Health, Education, and Welfare

Part I of a Two-part article

ANY "complete expert" on aerosol drugs should also be familiar with the preparation of new drug applications. And, although it has taken me about 20 years to learn just a little on the subject, you will probably become something of an expert just by reading the following.

The manufacturer of an aerosol product will satisfy himself before marketing it that it is safe and useful for its intended purpose if he is disinclined to inflict avoidable injury on his neighbors, or if he wishes to do a continuing repeat-business, or merely if he desires to stay out of the clutches of the law. If the aerosol is not a new drug, not a certifiable antibiotic or insulin preparation, not a pesticide for use on raw agricultural commodities, and not a food additive within the meaning of the Federal Food, Drug and Cosmetic Act, he is free to market it in interstate commerce without any prior clearance with the Food and Drug Administration. This is an important freedom that should be understood fully. Of course, the person who ships any article within the jurisdiction of the Federal Food, Drug and Cosmetic Act, especially when no prior clearance is involved, is solely responsible for its compliance with the act, that it is neither adulterated nor misbranded by reason of composition or labeling. Even for an article that does not require clearance before marketing, any manufacturer may obtain from FDA constructive comment with respect to the legality of the proposed product by submitting a complete statement of its composition and specimens of the proposed labeling. Such inquiries may be mailed to the Food and Drug Administration, Washington 25, D. C., and will receive a written reply. FDA is the kind of law enforcement agency that encourages and assists the regulated industries to comply with the law and avoid violations that may endanger the public health or welfare.

We may now reach a first conclusion: A new drug application is not required for an aerosol that is *not* a new drug, and FDA *will not accept a new drug application for it.* Time, effort and expense may be saved by submitting an inquiry rather than a new drug application for an aerosol that may not be a new drug.

Now let us consider the question, "Why should we ever be concerned about new drug applications for aerosols?"

The Federal Food, Drug and Cosmetic Act prohibits the shipment in interstate commerce of any new drug until an application is effective for it. This gives the distributor of an aerosol, when *it is* a new drug, a responsibility to acquire an effective new drug application before he markets the article. Clearly it would be unwise to initiate a business operation in violation of a Federal law armed with provisions for criminal prosecutions, seizures and injunction proceedings.

The purpose of this requirement of law is to insure that a new drug is adequately tested for safety before marketing. But let us emphasize that it is not sufficient for the distributor of a new drug to satisfy himself that it is safe, although this is an obvious first step. It is equally necessary under the law to satisfy the Food and Drug Administration that the new drug is safe.

We may now add a second conclu-

*Presented at the Seminar on Aerosol Technology, St. John's University College of Pharmacy, Jamaica, N. Y. on May 5, 1960.

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sion to our first by noting that, although it is inadvisable to submit a new drug application for an aerosol that is not a new drug, it is always advisable to submit an NDA for an aerosol that is a new drug.

This brings us to the question: "When is an aerosol preparation a new drug?"

The act defines the term drug as articles recognized in the *United States Pharmacopeia*, the *Homeopathic Pharmacopia*, or the *National Formulary;* articles intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease in man or other animals; articles other than food intended to affect the structure or any function of the body; and articles intended for use as a component of a drug.

This definition makes the labeling as well as the composition of an article critical with respect to the determination as to whether or not it is a drug. For example, water is a drug if it is labeled for the treatment of a disease. Perhaps a more interesting example to distributors of aerosols is that an article which by reason of its composition or labeling is intended for use as an anti-perspirant is a drug because it is intended to affect a structure or function of the body relating to perspiration.

The definition of the term "new drug" in section 201 (p) of the act may be paraphrased as any drug which is not generally recognized by experts qualified to evaluate the safety of drugs as safe for use as suggested in its labeling. The definition also includes a drug which has gained recognition of its safety as a result of studies but which has not otherwise been used for a material time or to a material extent under the conditions suggested in its labeling.

Section 130.1 (f) of the new drug regulations furnishes an interpretation of the legal definition of "new drug" which we may paraphrase and apply to aerosols as follows: The newness of a drug may arise by reason (among other reasons) of:

(1) The newness for drug use of any component of the aerosol whether it be an active ingredient, a carrier, a propellant or a solvent. FDA no longer regards as new drugs aerosols intended for external application to the skin solely by reason of their content of certain commonly used propellants, e.g., 11, 12 and 114. But aerosols intended for inhalation may be regarded as new drugs by reason of their content of propellants recognized as safe for application to the skin but not as inhalants.

(2) The newness for drug use of a combination of two or more substances, none of which is a new drug. It is obvious that the effects of a combination are not always predictable but must be studied.

(3) The newness for drug use of the proportion of a substance in a combination, even though such substance in other proportion is not a new drug. In applying knowledge derived from other dosage forms, we should take account of the drug concentration that the aerosol actually applies to the body, which may be substantially higher than its concentration in the aeosol container because of the loss of propellant and other volatilized components.

(4) The use of the drug for treating a different condition, although it may not be a new drug for treating some other conditions. For example, an aerosol containing a counter-irritant may not be considered a new drug when offered to relieve minor muscle soreness but *would be* a new drug if labeled for application to large burned areas of the body.

(5) The newness of a dosage or method or duration of administration or application. For example, a lotion may be safe for application to the area of the face when care is exercised to avoid application to the eyes or mucuous membranes. The same composition may be regarded as a new drug when offered for administration as an aerosol spray. To take a less obvious example, any aerosol preparation may be regarded as a new drug if by reason of its composition, duration of use or particle size it is not generally recognized as safe for inhalation, even though it is not offered for inhalation use, but when its conditions of use indicate that inhalation may pose a safety problem. Further, let us consider a drug which is recognized as safe for oral and parenteral administration. Contrary to a view occasionally expressed by drug manufacturers to FDA, these facts do not necessarily establish that the drug is safe for application to the skin; there may be serious questions of primary irritation or sensitization reactions. For example, an antihistamine drug generally recognized as safe for oral administration may be a new drug for application to the skin as an aerosol. Finally, it is perhaps obvious that a drug generally recognized as safe for oral, parenteral and topical administration may be a new drug by virtue of its intended administration as an aerosol by inhalation.

We have considered the legal definition of "new drug" and the application of some FDA interpretations of its meaning to aerosol preparations.

LET US now underline the fact that anyone, any manufacturer, has as much right as FDA to an opinion as to whether or not an article is a new drug within the meaning of the act. There is nothing in the law that gives FDA the final authority to decide that an article is a new drug. A manufacturer may disagree with FDA's opinion that his product is a new drug for which an effective application is required and market the drug without an application. But, and this is a very big but, when he does so, he should expect that FDA will exercise its responsibility to protect the public by initiating regulatory action in the Federal courts. The Federal courts are the final authority on the question of whether an article is a new drug and are called upon to resolve such differences of opinion whenever necessary. Manufacturers who do not wish to assume unnecessary risks usually seek the opinion of FDA as to whether or not a proposed article is a new drug. It should be recognized that, although such FDA opinions are not infallible, they have

the compensating virtue of being deliberately conservative in the interest of public-health protection. When our New Drug Branch informs a manufacturer that an article is not regarded as a new drug, FDA shares in responsibility for its safety. When a manufacturer obtains such an opinion in writing, he has some excellent, free insurance against litigation on a new drug charge. It is conceivable that experience after the marketing of such an article will dictate a need to change the decision on its new drug status, but if this occurred the manufacturer would be given full opportunity to do the obvious without litigation. Let us underscore the desirability of a written opinion that an article is not a new drug. Fallible memories or lapses in oral communications with misunderstandings have no insurance value. Let me add that such an opinion has assured value only with respect to a drug of a specified composition and well-defined labeling.

From the preceding discussion, it is clear that a written request for an FDA opinion on the new drug status of an aerosol should include complete information concerning its quantitative composition in the container and on application to the body, any other pertinent information on spray characterisics and particle size, and specimens of the complete proposed labeling containing full information for its use under all of the conditions for which it is intended or will be offered in its labeling or advertising. If the inquirer seeks to maintain that the article is not a new drug, he should furnish any information he can adduce to show that the drug is one generally recognized as safe by experts and has been used for a material time or to a material extent other than in investigations of its safety. Perhaps it is self-evident that the more ignorant our New Drug Branch is about an article, the less reason it has to believe that other experts are generally informed about it, and the more likely it is to conclude that the article is a new drug. There is no basis for concluding that the novel or unknown is generally recognized as safe. If the inquirer knows he has a novel preparation but has obtained evidence that it is safe, such evidence should, of course, be submitted in a new drug application rather than as an argument that the article is not a new drug. Finally, a showing that another firm is marketing a similar product is not necessarily proof that the preparation is not a new drug. Under the act, a new drug remains a new drug until it has been used to a material extent or for a material time. This means that every manufacturer must have an effective application for such an article until it is no longer a new drug.

In next month's installment of this valuable article, the author will discuss the actual contents requirements of the drug for which the new drug application is filed. — The Editor.

Now that we have considered the *why* and *when* to submit a new drug application, we may explore more fully the purpose and substance of an application. The act provides that an application shall contain (1) full reports of investigations that have been made to show whether the drug is safe for use; (2) a full list of the articles used as components of the drug; (3) a full statement of the composition of the drug; (4) a full description of the methods used in, and the facilities and controls used for, the manufacture, processing and packing of the drug; (5) required samples of the drug and its components; and (6) specimens of the proposed labeling for the drug.

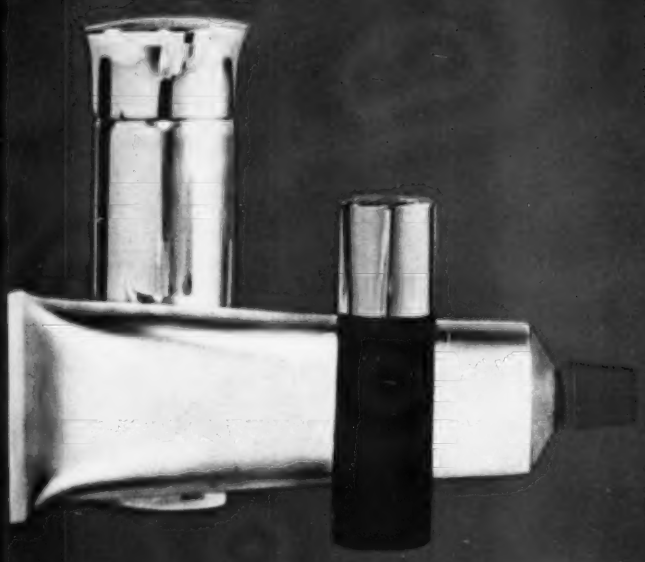
The significant purpose for the processing of new drug applications is contained in section 505 (d) of the act, which provides that an application may be refused, after giving the applicant notice and opportunity for a hearing, if it is found (1) that the submitted reports of investigations do not include adequate tests by all methods reasonably applicable to show whether the drug is safe for use; or (2) the tests show that the drug is unsafe or fail to show that it is safe; or (3) the methods, facilities and controls used for the manufacture, processing and packing of the drug are inadequate to preserve its identity, strength, quality and purity; or (4) there is insufficient information to determine whether the drug is safe for use under the conditions prescribed, recommended or suggested in the proposed labeling.

This authority to refuse an application also gives FDA the responsibility to refuse any application until it has been adequately demonstrated that the drug is safe for its intended uses and that it is produced and controlled to insure a uniformly safe preparation with appropriate standards of identity, strength, quality and purity.

It will be observed that the new drug provisions of the act make no mention of the submission of reports with respect to the efficacy of a new drug for the purposes claimed in its labeling. Further, there is no provision for refusing an application on the grounds that it fails to establish the efficacy of the drug. These facts may explain in part why some well-intentioned physicians have publicly criticized the drug manufacturing industry and the Government for permitting the marketing of new drugs inadequately tested, particularly with respect to their efficacy in the treatment of life-threatening conditions. Although the misconception underlying this criticism may do no great injury to these critics, the same misconception can be very costly to a drug manufacturer who submits a new drug application. For this reason, it is important to develop a clear and correct understanding of the way FDA interprets and works with these provisions of the act.

It is the deliberate policy of FDA, observed by the New Drug Branch, to give the terms "safe" and "unsafe" as employed in the processing of new drug applications as broad a meaning as is reasonably possible to insure a maximum of protection to the public health. This policy makes it necessary for applications for virtually all new drugs to include good evidence that the drug is efficacious for the

(*Continued on Page* 71)



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FEA Meets in Dusseldorf, Approves New Research Project

By Dr. Tom C. Clark
Druk-Pak, Zurich
Aerosol Age European Representative

PLAYING host to Europe's third "Aerosol Congress," the German Aerosol Trade Association (Interessengemeinschaft Aerosole GmbH, the IGA) presented a well organized program, a lively agenda, and an excellent evening of entertainment for over 260 guests assembled from some 12 countries of the world, including the United States. The first of these congresses took place in Zurich two years ago, the second in Paris early last summer, and the third in Dusseldorf (April 27-28) in connection with the Interpack Packaging Exposition. This latest one was so well organized, and so well attended, that it will be hard to beat in the future.

The Federation of European Aerosol Association Congress got under way even before the close of the fair with a cocktail party given for all guests by Farbwerke Hoechst ("Frigen" propellants) and J. A. Schmalbach(aerosol cans) just before noon on April 27, the last day of the Fair. About 250 guests attended the affair, and there was much praise for it during the remainder of the Congress.

A highlight of the Congress came Thursday afternoon with the election of M. Francois Harlan, president of Ets. de Trevise S.A., Colombes, and editor of *Parfums, Savons et Cosmetique*, as new president of the Federation. The FEA presidency is a rotating affair (between member organizations) and Gerald Meyer, outgoing president (president of Precision Valve International), who was founding president and so instrumental in its success, stepped down with the applause of the entire membership.

Perhaps at this point a word of explanation about the FEA structure

---

Top: Foreground, Francois Harlan (Ets. De Trevise), president of the FEA; Mrs. and Mr. Claude Franck (Marcel Franck), Fred Lodes (Lodes Aerosol Consultants) and Yrjo Talvitie (Berner Oy).

Second row: Count Scribani-Rossi (Bombrini Parodi-Delfino), Dr. Werner Hoffmann (Prazisions-Ventil), and Renaud Bouffe (Elekal SA and Insecticides Geigy).

Below: J. Bossina (Aerosol Co., Holland), W. G. Delmore (Precision Valve International), Heinz Prast (J. A. Schmalbach) and Richard Waldherr (Johann Waldherr).

Top: A. Herzka (Pressurized Packaging Consultants), John Briston (Pressure Packaging Discussion Group), H. R. Hearn (Metal Box Co.) and P. S. Swallowfield (Swallowfield Aerosols). Dr. Werner Hoffman (Prazios-Ventil) and Dr. Kurt Jacobi (Schmalbach). Harry W. Holm (Aerosol Fylling), Barend Lodbrok and M. Krieger (Hoechst).

Second row: Hubert Aleff (Sprutechnik), Dr. Bruno Lowenberg (Aerosol Packing Co. of Stockholm), Per Randby (A/S Norosol), Hans Lowenberg (Aerosol Packing), Roar Randby (A/S Norosol) and Dr. Hans Kubler (Sprutechnik). Emil Hirschburger (Aerosol Service) and A. Wettler (Pluss-Staufer). Fred Lodes, Renaud Bouffe and Dr. Tom C. Clark (Druk-Pak).

Bottom: M. Krieger (Hoechst), Fred Lodes, E. Hof (Hoechst), R. Hoeppner (Carl Hoeppner) and B. Lodbrok (Hoechst). W. Waldherr (Johann Waldherr), A. Herzka, and A. W. Naegeli (IAA). Dr. Pedro Junyent (INIBSA of Barcelona), Gerald Mayer and W. G. Delmore (Precision Valve International).

may help to make the alphabetical terminology more understandable. FEA stands for Federation of European Aerosol Associations, which is the top aerosol trade group in Europe and selects its officers and directors from the other aerosol trade associations. At present there are five trade associations or committees: one in France (C.F.A.), Germany (IGA), Finland, Spain, and the International Aerosol Association (IAA) in Zurich. All except the latter confine their membership to the aerosol firms in their own countries, but the IAA, with about 85 members the largest, covers Switzerland and those industry members in other countries which have not yet formed national associations or committees of their own. At the top, the FEA coordinates the activities of all members, holds the Congresses, seeks to standardize production and quality through its Chemical-Technical Committee, and issues the "Aerosol Bulletin."

Spain is a newcomer to the growing list of national associations and there was talk that Britain may form her own association before the next Congress takes place — probably in the fall of 1961. Because of the FEA's role and its contact with the CSMA, it is hoped that in the future national groups will be formed along committee lines with the committee chairman acting as official representative on the FEA board. It was also advised that a minimum membership (at least five) be obtained before it could receive FEA recognition, and that suppliers as well as loaders should make up the membership. As is apparent, formation of each national association necessarily results

in further inroads on the IAA membership, but this was expected and the IAA is still performing a highly important function.

Following the election of M. Harlan, the Chemical Technical Committee announced a new cooperative research project which would be conducted under the direction of the French Association's Technical Committee. This study, on the effect of aerosol propellants on skin and organs of respiration, is being supported by the FEA through the contributions of its member associations and is expected to be of considerable value to the aerosol industries all over the world.

The formal Congress got underway on the morning of Friday, April 29, with over 270 guests assembled in the grand ballroom of Dusseldorf's Park Hotel. W. Staehle, president of the IGA, welcomed the guests and in his address emphasized the growing future of pressurized packaging. In his remarks he quoted the old slogan "trade follows the flag" with a new one of his coining "business follows the inventor," pointing out the industry's need for constant basic and applied research.

At the technical session, outstanding papers were read by Dr. Otto K. Jacobi, Kolmar Research Center, Wiesbaden, on "Aerosols in Cosmetics and Pharamceuticals," and by Bernard Gouarin, of Cie. de Saint-Bogain, on the "Glass Aerosol Container." A. Herzka of Pressurized Packaging Consultants, Ltd., London, delivered a paper on "Aerosol Regulations and their Anomalies." Full texts of these three papers will appear

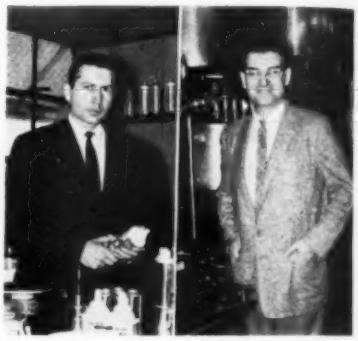
(*Continued on Page* 69)

Capitol Packaging Unveils New Midwest Custom Filling Plant

HIGH speed, high capacity and versatility have been built into the new aerosol loading plant of Capitol Packaging Co. at Melrose Park, Ill. Equipment includes three new stainless steel pressure filling lines, one a high-speed rotary unit. A new, improved propellant storage and blending system has also been installed to give the company a capacity of more than 25 million aerosol packages per year. Products handled range from household cleaners and protective coatings to cosmetics and shaving cream.

The three lines can be operated simultaneously on three different jobs or all together on one major order. At times, one line will handle orders as small as 150 cans of touch-up paints, company officials report, while another is turning out an order for 100,000 cans. There are separate facilities for handling solvent and water-based materials.

Capitol's new plant and entire operation have been set up with the object of accommodating the private label trade. By not marketing products under its own label, the company believes it frees itself of any conflict of interests. Complete laboratory and research facilities are maintained for the benefit of private label customers.

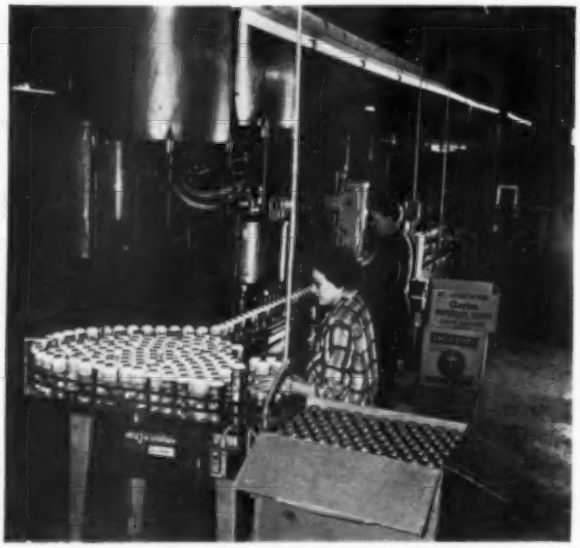


Dr. Jerome J. Siegel (l.) technical director and Norman Weiner, general manager.

"We're set up for the fellow in a hurry," says Norman Weiner, general manager and co-founder of the firm. "We can start up a line on a few hours' notice and, if necessary, run it for weeks. Costwise, we think we can compete with any type of filling operation in the business."

A mechanical engineer, Mr. Weiner has had wide experience in the packaging field, particularly in contract packaging. His partner, Dr. Jerome J. Siegel, technical director, taught physical chemistry at the University of Chicago and Michigan State University. He has also worked in recent years as a consultant on halogenated hydrocarbons.

The new plant provides 30,000 square feet of floor space indoors and 40,000 square feet of storage area outside. The site, in a Chicago suburb, is close to the intersection of the north-south and east-west roads of the Illinois Tollways, ideal for truck shipping. Facilities also include a large warehouse. ★



This is one of three pressure lines at Capitol's new plant. Two of the lines are in-line installations, such as this one, and a third is a rotary unit.

DU-OL, a product of Supersite Corp., Derby, Conn. is being packaged by Pace, Inc., Wilmington filler, in a Crown lithographed can with a Precision valve and West Penn cap. Nitrogen is the propellant for product, which is designed to free frozen or rusted metal parts.

Rhulifoam is a new product of the Lederle Laboratories Division of American Cyanamid Co., Pearl River, N. Y. Foam version is an anesthetic-analgesic designed to provide relief for minor itching and pain associated with ivy and oak poisoning, insect bites, urticaria, and other minor skin irritations. Two-ounce can, retailing to pharmacists for $1.35 contains zirconium oxide, calamine, benzocaine, menthol and camphor as active ingredients. Peerless Tube aluminum container uses Precision valve and Gilbert Plastics' closure.

Desenex Aerosol Foot Powder is a product of the Maltbie Laboratories Division of Wallace & Tiernan, Inc., Belleville, N. J. Listing for $1.98, it is packaged in a Crown can with an Aerosol Research valve and uses "Genetron" propellant. Old Empire, Inc., Newark, is the filler.

Red Fire Paste Charcoal Lighter has been introduced by Chase Products Co., Maywood, Ill., at a retail price of 79 cents for 16-ounce can. Package uses Crown Can with Precision valve.

NEW PRODUCTS AND PACKAGES

Interpack 1960

THE 1960 Interpack exhibition at Dusseldorf (April 20-25) was the biggest ever and should do much to establish this particular show as the leading international packaging exposition in the world. Registered attendance exceeded 120,000 of whom nearly half were from 47 countries outside Germany. American visitors, of whom there were hundreds, unhesitatingly ranked it well above U.S. general and specialized packaging exhibitions. And as evidence of their recognition of the show's importance, the British had a large stand in the main building where all their exhibitors were concentrated.

The Fair was equally satisfying to visitors and exhibitors alike. The visitors apparently came to buy, not just

By Dr. Tom C. Clark
Druk-Pak, Zurich
Aerosol Age European Representative

to look,and the exhibitors obviously came to sell. As a result, contracts amounting to millions of dollars were signed, and at the end of the Fair many machines carried tags saying "Sold, to Italy, Norway, U.S.A., England, etc."—*all on the same machine.*

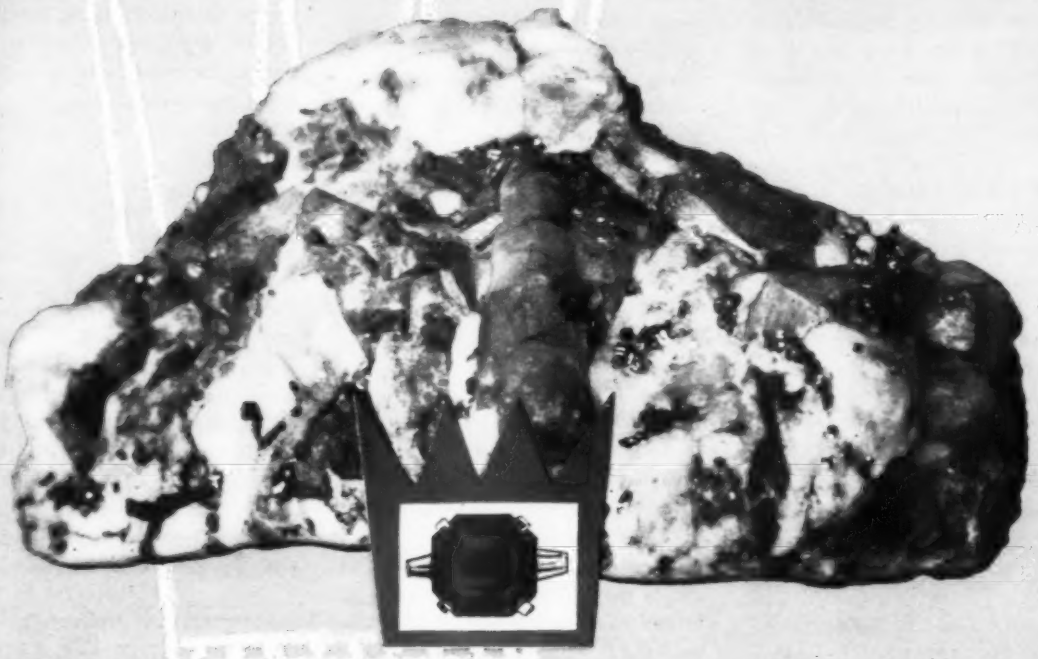
From all the evidence at the Fair, it seems that, though U.S. packaging and filling machines may be faster, they will find it hard to compete with European machines in price, construction, and trouble-free operation. Prices for a comparable performance were estimated about 50% less than American prices and slight alterations for specific requirements were reasonably estimated—not in the thousands of dollars for any slight variation from the standard.

There seemed to be something for everyone — new jaw sealers, plastics of all types in films, tubes, bottles, and other containers, new-type high-frequency sealers which automatically adjust themselves in time for the weld to the thickness of the material. Tablet fillers were shown which get just the right number into bottles held upsidedown. For the first time there was shown a series of automatic machines which put cans into cartons (together with a number of leaflets), plus an opening key, and then tuck

(*Continued on Page 71*)

Four of the principal aerosol exhibits were (top) Risdon Valve (Solfrene), Precision Valve International, Druk-Pak Waldherr, and J. A. Schmalbach.

Radiant Jewels from Nature's Crown — Fragrances by Norda



Emerald clear are the fragrances Norda creates to help make your products clearly the finest. Knowing Norda craftsmen perform artistry in scents... bring you the ultimate in essences for your proudest creations.

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TGA, SCC Hold Annual New York Meetings, Toxicity is Major Subject

FOUR papers on toxicity testing and some of the implications of the subject to the Food and Drug Administration were the highlights of the May 11 meeting of the Scientific Section of the Toilet Goods Association. Meeting in New York's Waldorf Astoria Hotel, the TGA devoted the major share of its program to the general subject of toxicity.

The program began with a charge by Dr. Bernard Davidow of New Drug Institute, Inc., that there is far too much vagueness on the part of toilet goods marketers about how to *go about* testing for toxicity. He said that some of these marketers criticize the specificity of published tests, and some tend to throw up their hands in despair at the array of tests needed to prove the safety of certain product types. Dr. Davidow suggested that animal tests have certain shortcomings but are invaluable in that a harmful dosage given to animals can give an indication of what small damage may be caused in man.

Dr. Davidow came out strongly for prophetic testing of the product on a selected panel of human subjects (of course, after satisfactory results with all the needed animal tests). He said this is so necessary because, if the purchaser does get a reaction, it will usually show up in lack of a repeat sale. He advised that a questionaire be developed for new products to check consumer reaction to them.

More common sense in interpretation of test results is needed, Dr. Bernard L. Oser of the Food and Drug Research Laboratories, Inc., stated. In the final analysis, after the many other tests, the only *real* indication of the relative safety of the product must come from close observation of an initially limited population group by a qualified dermatologist. The Delaney Amendment came in for a pointed attack by Dr. Oser, who declared that there "must be a gross inconsistency in public policy which tolerates smog and radioactive fallout, and devotes so much attention to slightly carcinogenous materials in cosmetics." The problem of what constitutes a carinogen is not cut and dried, he said, and any prosecution of the Delaney clause needs greater emphasis on scientific judgment in estimating weak carcinogens.

"Toxicological tests must reflect form, use and duration of intended use. It may be necessary to test each formulation rather than relying on the safety of the ingredients alone." Dr. Oser pointed out that accidental inhalation of aerosols should always be considered a distinct possibility and that local (of the bronchial tract and nasal passages) and systemic (possible alveolar absorption) tests should be performed.

The regulated industries — food, pesticide, pharmaceutical and, now, cosmetic—should work more closely together in solving mutual problems, Dr. Lloyd W. Hazleton of Hazleton Laboratories declared. Tracing the history of the passage of each important measure laying down rules for these four industries, he said there has been far too little reference of one industry's problems to those of another. The burden of proof rests on the manufacturer, he pointed out, and too often he shoulders the entire burden without reference to anything that went before in a related situation.

Final of the four speakers on toxicity was Dr. Arnold J. Lehman, head of the Division of Pharmacology of the FDA. Dr. Lehman suggested that sensitization is probably the most frequently encountered problem with cosmetics. For aerosols, he advised that, although the propellant gases are relatively inert, there has been a minor problem of burning because of improper distance between the container and the skin of the user. "The aerosol greatly complicates the inhalation toxicity problem with any cosmetic," he concluded.

PROBLEMS in hair chemistry dominated the field of subjects as the Society of Cosmetic Chemists

(*Continued on Page* 68)

The SCC speakers included E. A. Newcomb, (chairman of the program committee); Dr. G. Robert Clark; Dr. Herbert C. Stecker; H. J. Amsterdam (president of the SCC); Dr. Richard E. Faust; Dr. Sidney Riegelman; Dr. William Colburn; and Robert James.

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1959 Aerosol Survey Reveals Continued Gains, Response Exceeds 1958

(Survey figures on next page)

PRODUCTION of non-food aerosols in the United States and Canada continues to grow in excess of 20% per year, the new survey of the Chemical Specialties Manufacturers Association reported last month. Non-food aerosol production reached a new high in 1959 of more than 575 million units, a 22% increase over the 1958 figure of 470 million units. This figure represents an estimated total retail value of $750 million.

The survey figures were based on confidential information obtained from aerosol fillers, container and valve manufacturers. The total of 575 million units is actually a carefully estimated projection of the total reported units (498.3 million) figured against a total valve production last year of 604 million and a container production of 584 million. In addition, compilers of the product survey had to base their total on the fact that of the 217 companies known as operating filling lines, 115 responded with their detailed breakdown of aerosol products and 19 reported no production. The other 83 did not report. Nearly every *major* filler and marketer was included in the list.

For the fourth consecutive year, hair spray production led all other products, although there was some small decrease from the 1958 figures attributed by the committee to "adverse publicity regarding the product" and legal action regarding patents. The leadership of hair sprays, with 16% of total production, was closely challenged by shaving lathers where a 60% increase over 1958 was revealed. The size of this gain came as a small surprise because of recent incursions made on conventional shaving by increased sales of electric razors. Shaving creams currently represent 14% of the total non-food aerosols produced.

Another outstanding performance was turned in by room deodorants, with an increase of more than 20% in 1959 to a total production of almost 60 million.

Other groups showing marked increases were coatings and finishes, which now account for more than 10%, and insecticides, which contributed more than 50 million units to the total. In the latter case, significant increase was noted in the residual types, where production was more than 33% higher.

Colognes and perfumes, a closely watched product category in the cosmetics industry, again registered a large increase in aerosol production. In 1959 the total aerosol production more than doubled, with metal containers regaining some of the market dominance previously enjoyed by coated and uncoated glass.

For the first time in the nine years of the survey, waxes and polishes—previously a part of the "other household products" category, were listed separately.

As was expected, containers of six-ounce or smaller size still leads in sales popularity. But the 1959 Survey revealed further gains for the large economy size 16-ounce package, which last year accounted for more than a quarter of total production.

For the first time the survey included a separate report of the Canadian aerosol production, which is currently about 3% of the American total. Number of units filled by eight Canadian companies in their own plants last year totaled:

	Number of Units Filled
Glass Containers—All Sizes	1,311,580
Metal Containers	
16-ounce but over 12	2,912,389
12-ounce but over 6	8,365,551
6-ounce and less	7,586,725
Total Metal Containers	18,864,665
Total Glass and Metal Containers	20,176,245

Results of the survey were given at the CSMA midyear meeting in Chicago (on May 18) by E. E. Husted, Union Carbide Corp., chairman of the Aerosol Product Survey Committee. In his report, he pointed out that the '59 survey included the following revisions:

1. In the general category of insect sprays there were previously four categories: (1) space insecticides, (2) residual insecticides—roach and ant sprays, (3) residual insecticides—plants, and (4) moth proofers. Because it was felt that the division of residual insecticides was not significant, the two categories were combined.
2. In the past, under coatings there have been two categories—pigmented and metallic paints, and clear plastic sprays. Once again, there seemed to be little significance in having two categories, so they were combined.
3. Under household products, there has been a category of fire extinguishers. Since this classification has remained small without evidence of growth, your committee felt that a separate category should not be maintained and it was therefore incorporated under item 18.
4. A new category has been added under household products, item 9—waxes and polishes. The committee felt that this category in 1959 would exceed 5 million units, which has been the arbitrary bench mark for establishing a new category. The resulting report shows a justification for a separate group classification.
5. Under personal products, colognes and perfumes have been broken into two categories. Because it was felt that a substantial number of small units are now being produced, two categories were established—"over one ounce", and "one ounce and under". Again, the figures reported justify the need of the additional category.
6. Finally, "sun tan preparations" under personal products has been eliminated as a separate category since it has been a small, static category. It was incorporated under "Other Personal Products."

In previous years, a retail value of $1.00 per unit was used to estimate the total retail value of aerosol products. The Product Survey Committee

(*Continued on Page* 83)

SURVEY OF AEROSOL AND PRESSURIZED PRODUCTS FILLED IN 1959
(NON-FOOD PRODUCTS ONLY)
CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION

Number of units by the sizes indicated for each of the products listed, filled by 115 companies in their own plants in 1959.

PRODUCT	NUMBER OF UNITS FILLED				
	Glass Containers All Sizes	Metal Containers 16-Ounces But Over 12	Metal Containers 12-Ounce But Over 6	Metal Containers 6-Ounce And Less	Total
INSECT SPRAYS					
1. Space Insecticides	-o-	16,621,048	20,741,202	1,388,398	38,750,648
2. Residual Insecticides all Types (such as roach and ant sprays, insect repellents, plants, etc.)	-o-	7,356,331	10,618,053	3,531,698	21,506,082
3. Mothproofers (includes all fabric pests)	-o-	1,636,750	3,955,574	61,720	5,654,044
COATINGS and (or) FINISHES					
4. All Types (Pigmented, Metallic, Clear Plastic, Protective and Decorative, etc.)	-o-	36,570,326	9,636,131	6,349,379	52,555,836
HOUSEHOLD PRODUCTS					
5. Room Deodorants	†	4,598,583	19,372,672	35,752,334	59,723,589
6. Snow all Types	-o-	4,197,129	4,040,643	721,409	8,959,181
7. Glass Cleaners	†	16,919,284	1,350,040	200,888	18,470,212
8. Shoe or Leather Dressings	†	1,955,991	2,528,975	9,254,103	13,739,069
9. Waxes and Polishes (household and automotive)	†	7,209,699	*	4,633,739	11,843,438
10. Other Household Products all Types (such as metal, oven, rug and upholstery cleaners; water repellents, etc.)	†	4,292,153	19,895,384	410,372	24,597,909
PERSONAL PRODUCTS					
11. Shaving Lather	-o-	306,138	20,352,663	51,952,158	72,610,959
12. Hair Sprays and Dressings	†	22,360,817	26,128,270	31,198,387	79,687,474
13. Dental Cream	-o-	††	††	11,241,523	11,241,523
14. Medicinals and Pharmaceuticals (such as fungicides, burn treatments, topical antiseptics, oral medicinals, anesthetics, antibiotics, etc.)	3,329,752	††	426,829	6,279,731	10,036,312
15. Colognes and Perfumes, (a) Over one ounce	18,586,393	xxxxx	xxxxx	9,798,833	28,385,226
(b) One ounce and under	2,211,201	xxxxx	xxxxx	3,481,034	5,692,235
16. Other Personal Products (such as shampoos, sun tan preparations, personal deodorants, sachets, hand lotions, powders, depilatories, etc.)	666,622	542,704	3,239,335	7,792,977	12,241,638
MISCELLANEOUS					
17. Veterinarian and Pet Products (such as shampoos, deodorants and insecticides, etc.)	-o-	286,749	2,727,994	1,098,282	4,113,025
18. Miscellaneous Products (such as mildew, fire extinguishers, automotive (other than reported in categories 4 and 9), industrial lubricants and any others.)	-o-	6,167,350	10,062,705	1,783,457	18,013,512
† Total of Glass Categories which are too revealing to be released	466,031	-	-	-	466,031
TOTALS	25,259,999	131,021,052	155,076,470	186,930,422	498,287,943

The above totals include Canadian production in the total amount of 20,176,245

† Too revealing to be released. Included in total.
* Too revealing to be released. Included in 10, Other Household Products all Types.
†† Too revealing to be released. Included in 16, Other Personal Products.

Plastic-coated glass makes the ideal pressure package

Only Owens-Illinois pressure packages have this bond of plastic to glass

THE PLASTIC IS MORE THAN a jacket around the bottle in an Owens-Illinois pressure package . . . it's bonded to the glass as a part of the container itself. It won't peel off.

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Butonate—

new insecticide developed by WARF

"Butonate," a new organic insecticide developed by the Department of Entomology of the University of Wisconsin, has been licensed by the Wisconsin Alumni Research Foundation for sale and distribution by Prentiss Drug & Chemical Co., New York. Though not yet formulated as an aerosol product, the insecticide last month was said to have demonstrated an insect killing effectiveness that could make it a "promising" future constituent of both flying insect sprays and residual formulations for crawling insects.

In a special press conference held in conjunction with the mid-year meeting of the Chemical Specialties Manufacturers Association (May 16), Prentiss officials for the first time published new data showing the insecticide's activity compared with that of other older materials. At the conference John Stoddard, Prentiss vice president, revealed that the material has a low mammalian toxicity, which, he said, is attributable to rapid debutyrylation and phosphate hydrolysis.

Mr. Stoddard said butonate is merely the suggested generic name for the material, which is being manufactured by Chemagro Corp., Kansas City. He gave the following data gathered from experiments with adult white rats of the Sprague-Dawley strain:

	Approximate LD_{50} Value
Acute oral LD 50	1,100 mg/kg
Subcutaneous LD 50	700 mg/kg
Intraperitoneal LD 50	700 mg/kg
Dermal LD 50	7,000 mg/kg
Inhalation Studies	No evidence of irritation or toxicity

Mr. Stoddard indicated that color and odor problems in aerosol formulations would be minimized by the fact of butonate's lack of color (it resembles water) and its mild ester odor. It is said to be generally compatible with nonalkaline insecticides and fungicides, and stable in neutral or acidic aqueous solution. It is "readily miscible" with most organic solvents, including benzene, toluene, hexane, xylene, acetone, ethanol, methanol and methyl cellosolve.

In comparison with other commonly used economic poisons, it was reported that butonate evidenced the following toxicity:

Compound	*Acute Oral Approximate LL_{50} Mg/Kg (Rats)*
Piperonyl Butoxide	11,500
Methoxychlor	6,000
Butonate Technical	1,100
Allethrin	680
Chlordane Technical	457
DDT	250
Lindane	125
Diazinon	125

For use in residual insecticide formulations in which it is expected to

(*Continued on Page* 83)

OFFICIAL PEET-GRADY TEST
(Large Group Method)

Formulation % w/w			*Average % Knockdown*			*Average % Mortality*	*OTI*	
Butonate	*Pyrethrins*	*Piperonyl Butoxide*	*3'*	*5'*	*10'*	*24 Hours*	*Dif.*	*Grade*
—	OTI	—	89.2	92.6	96.3	35.9	—	—
—	0.02	0.05	85.2	91.5	97.1	66.9	+31.0	AA
0.4	0.02	0.05	81.5	91.2	98.1	96.6	+60.7	AA
0.8	0.02	0.05	85.5	91.4	97.9	97.8	+61.9	AA

American Perfumers Hear New Method of Classifying Fragrance Customers

HUMAN temperment may have a far greater effect on odor selection, and hence product sale, than it was previously given credit for. This concept was suggested by Alfred H. Moeller of Noville Essential Oil Co., speaking before the sixth annual symposium of the American Society of Perfumers in New York on April 28. Mr. Moeller said he based this concept on two basic beliefs (both of which, he said, have strong verification in psychology): (1) an individual does not select odors solely in accordance with his own acquired taste, and (2) differences of taste between individuals are brought about not only by environmental influence.

These concepts are especially important, Mr. Moeller pointed out, because the so-called "choice" customers (those who are aware of the perfumes in an aerosol or any other product) make up a small percentage of the total potential market. He said the perfumer must try to cater first to these people, because their expression of taste will have a strong bearing on the products bought by the less perceptive customers. He revealed that he based these basic premises on the constitutional psychology of William H. Sheldon, which suggests that people fall into three basic types (or physiques) which determine their respective tastes.

He classified the three types as:

1. Those in which roundness or plumpness of physique predominate. These people, he said, dote on the ceremonial aspects of meals, need other people around them, and have an instinct for comfort. Their sentimentality and taste (in food and other "creature comforts") make them the *best prospects* for products' perfume appeal.
2. The square or muscular type. Energetic and vigorous, this type of individual is known for his adventurousness, his frankness, and for

(*Continued on Page* 83)

ABILITIES

FACILITIES

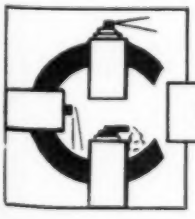
EXPERIENCE

ALL ADD UP TO

SERVICE

WHEN YOU PRESSURE PACKAGE YOUR PRODUCT AT CONTINENTAL FILLING

Call Continental Filling Corporation
for Pressure Packaging of All Types



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Danville, Illinois

Synfleur perfumes are backed by more than a half-century of successful research, development and manufacture. Established in 1889, Synfleur has pioneered a large number of quality flavors and fragrances and constantly keeps abreast of new trends and discoveries to supply industrial needs. This extensive effort has resulted in a comprehensive line of perfumes especially developed for use with aerosol propellants – fragrances that rank high on consumers' preference lists. That's why Synfleur perfumes will help sell your aerosol products and keep them sold! They're yours for bigger profits.

Synfleur has the facilities and technical skill to develop special odors to your particular specifications. Client conferences, of course, are kept strictly confidential.

Perfumes for AEROSOLS by Synfleur

SACHET SPRAYS

Lavender	DH-66
Cologne	DH-111
Cologne Bouquet	DH-117
Carnation	DH-131
Cedar Wood	DH-132

COLOGNES – PERFUMES

Cologne	DH-23
Bouquet	DH-28
Floral	DH-57
Lavender	DH-66
Lilac	DH-72
Floral Cologne	DH-83
French Oriental	DH-87
French Bouquet	DH-90
Cologne	DH-111
Jasmin Bouquet	DH-123
Mist Bouquet	DH-125
Mist Bouquet	DH-130
English Lavender	DH-133
Oriental Bouquet	DH-138
Sandalwood	DH-149

HOUSEHOLD & AIR FRESHENER SPRAYS

Cologne	DH-23
Siberian Pine	DH-29
Pine Wick Type	DH-30
Xmas Tree Pine	DH-31
Meadowsweet Bouquet	DH-34
Bouquet	DH-41
Lavender Bouquet	DH-45
Rose	DH-55
Orange Blossom	DH-59
New Mown Hay	DH-69
Spice	DH-74
Pine Virgin	DH-112
Cool Mint	DH-115
Spice Lavender Bouquet	DH-129
Carnation	DH-131
Medicinal	DH-139
Cool Pine	DH-144
Lavender Bouquet	DH-150

HAIR LACQUER PVP

Cologne	DH-23
Rose	DH-55
Orange Blossom	DH-59
Floral Bouquet	DH-79
French Oriental	DH-87
Oriental	DH-103
Cologne Bouquet	DH-117
Carnation	DH-131

SHAVE CREAMS, SHAMPOOS, SOAPS

Spice	DH-40
Lavender Bouquet	DH-44
Oriental Bouquet	DH-54
Rose	DH-55
Spicy Floral Bouquet	DH-56
Lilac	DH-72
Bay Rum	DH-89
Lemon	DH-94
Carnation	DH-131
English Lavender	DH-133
Lavender Bouquet	DH-150

PHARMACEUTICALS

Spice	DH-40
Medicinal	DH-70
Bay Rum	DH-89
Lemon	DH-94
Lilac Bouquet	DH-95
Jasmin Bouquet	DH-123
Floral Bouquet	DH-147

CREAMS, LOTIONS, COSMETICS

Cologne	DH-23
Spice	DH-40
Lavender Bouquet	DH-44
Oriental Bouquet	DH-54
Rose	DH-55
Orange Blossom	DH-59
Lavender	DH-66
Floral Bouquet	DH-76
Lemon	DH-94
Lily Muguet	DH-102
Lavender	DH-119
Carnation	DH-131
Cologne	DH-142
Floral Bouquet	DH-147

MOTH & INSECT SPRAYS

Siberian Pine	DH-29
Cedar Balsam Pine	DH-33
Violet	DH-42
Spicy Mint	DH-50
New Mown Hay	DH-69
Spice	DH-74
Para Odor	DH-122
Jasmin Bouquet	DH-123
Cedar	DH-127
Cedar Wood	DH-132
English Lavender	DH-133
Lavender Bouquet	DH-150

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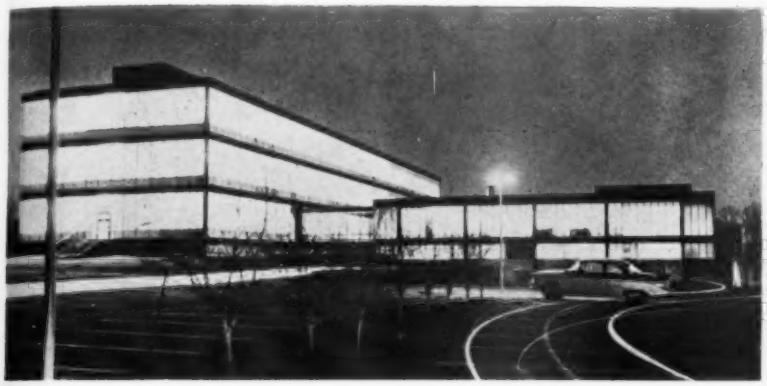
Union Carbide Formally Opens New Technical Service Laboratory



A NEW Technical Service Laboratory for Union Carbide Chemicals Co. was formally opened last month in Tarrytown, N. Y. Union Carbide has two other laboratories, both located in Charleston, W. Va., one devoted to research and the other to process development studies. Prime function of the new Tarrytown laboratory will be to aid in the development and improvement of the products of Carbide's customers.

Typical of the 29 major industry groups in which work is already underway at the laboratory are aerosol propellants, automotive products, polyether foams, refrigerants, plasticizers, water-soluble chemicals, detergents, household products, gas purification and surface coatings.

The new aerosol section is designed to help aerosol fillers and marketers solve formulating problems. It is manned by a staff of chemists engaged in a wide range of aerosol research, including studies on water-based systems and problems of emulsion and solubility. To date, a large number of aerosol products—from adhesive bandages and foot relief sprays to anti-perspirants and fumigants—have come under the study of Carbide's laboratory personnel.

Included in the laboratory's equipment are both cold and pressure filling units. Aerosol testing instruments include a spray-rate unit, a spray pattern tester and a unit for calibrating vapor pressure gauges. In addition, a network of related scientific instruments is available in the technical center. This includes a gas chromatograph, an ultra-violet and infra-red spectograph, an Instron unit to test the strength of materials, and a three-dimensional microscope for photographing spray patterns

The entire laboratory building accommodates about 100 scientists with a supporting and administrative staff of 50 people under the direction of Dr. A. B. Steele. The main portion is a three-story stainless steel and glass building 300 feet long and 60 feet wide. About one-third of the space is devoted to administrative offices and public areas. The remainder is divided into 46 laboratories with 33 adjacent offices. A mechanical test building is connected to the main laboratory.

J. A. Field, Carbide's vice president of marketing, told guests at the official opening of the laboratory that "one can't lose sight of the fact that the 'sale' is the prime mover that activates manufacturing and related activities. In today's rapidly changing market, the sales representative must offer *more* than just a good product. He must also offer the technology that will help his customer keep up with these changes and use the products more profitably."

He observed that technical service has become an indispensable part of product development and sales. "It assists customers in the best use of products, and helps the manufacturer to be aware of changing markets that affect current and future sales. Since customers are sometimes wary of changing their formulations," he noted, "we must be responsive to the needs of our customers. These needs may be defined only by offering complete test data and service back-up such as is available in our new Technical Center." ★

AEROSOLS in review

In this column important aerosol subjects appearing in other periodicals (both domestic and foreign) are reviewed and summarized. It is felt that this service enables the reader to keep abreast of most of the significant contemporary articles on the industry, even though they may appear in other periodicals. Since there is a chance that some pertinent articles may be overlooked, readers are invited to call our attention to any they judge important enough to review. —*The Editor.*

Chemweek Appraises Fillers

AEROSOL custom fillers are "re-evaluating" their position in the aerosol field, says the May 7th edition of *Chemical Week* magazine, in an article titled "How Aerosol Fillers Face the 'Captive' Threat." Pointing to S. C. Johnson as the latest example of a major marketing company to install its own filling installation, the article points out that it is the opinion of most of the major fillers that the prime function of the custom filler, service and new product development, will always find a ready market.

Perhaps erroneously, the article predicts that the filler will be considering "whether to go beyond the limited role of filling cans into functions such as manufacture of aerosol components or marketing products bearing their own labels." The latter function has always been considered a possibility by custom fillers, but, with a few notable exceptions (Bridgeport Brass and Sprayon Products), most fillers have left component manufacture strictly to the mass-producer specialists in the industry.

Perhaps the most important things written in the article concern the old controversy about if and when a marketer should consider installing his own line. "Companies generally can save money by doing their own filling, but only when they sell a large number of units. The number is a matter of debate in the aerosol industry. A figure often quoted is one million units per year. Johnson,

(*Continued on Page* 74)

Price Cutter
Determined to meet competition, he has hacked his price down to the point where he's holding on to his customer—losing his shirt.
Bewildered
He doesn't quite know what's going on in the industry, sees his customers becoming captive fillers and doesn't know what to do.
Eternal Optimist
Unfazed by talk of mounting competition, he thinks he'll survive any trade upheaval, sees no need to adjust to changing trends.
Visionary
Not interested in being a filler per se, he sees himself as a creator of new ideas, thinks all nonaerosols archaic.
Empire Builder
He has dreams of marketing his own aerosols, of buying a valve company, making his own cans, and components.

Chemical Week • May 7, 1960

For success in creating

Aerosol perfumes and colognes

rely on Givaudan ability

Superior skill, artistry, creative imagination, knowledge of consumer preferences...these are the foundations on which a successful perfume or cologne is built. But...an aerosol fragrance requires even more.

Givaudan offers a complete line of perfume and cologne fragrances which have been specifically prepared to meet the requirements of pressure packaging. Or, we can custom-make a fragrance to meet your specific aerosol needs.

Our staff will welcome the opportunity to discuss your aerosol fragrance requirements.

GIVAUDAN-DELAWANNA, INC.
321 West 44th Street, New York 36, N. Y.

Problem: How to capture a profitable market.
Solution: Switch to "controlled spray" aerosol containers.

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EMSON METERED VALVES

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EMSON RESEARCH, INC.
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Beginning with Fundamentals

(*From Page* 21)

enough in custom filling plants. Line clean-up between orders could be improved. The production facilities should be ready for detailed inspection by the customer at all times. Detailed procedures should be carried out at the end of each work day, and (possibly just as important) line personnel should be allotted a specified time interval before the end of their shift to clean up the filling line. Storage of materials and even components should be kept away from the line, and the floor area should be kept perfectly clean of extraneous matter.

All these are fundamentals of good aerosol filling. But for the custom filler to forget any of these elemental rudiments of good housekeeping is to jeopardise his chances of profiting from a pharmaceutical market which won't tolerate *any* sloppiness.★

Test Your Aerosols Automatically

with ISLAND'S Styl-O-Matic Heat and Leak Test Tank

Available in single or double chain widths for 30 up to 120 containers per minute or up to 200 per minute with increased length . . . stainless steel Rex Table Top chain . . . cans are prevented from slipping on the decline or incline by magnets attached to the chain track . . . tank available in heavy gauge stainless steel or hot dipped galvanized . . . available with Rotary Surge Table infeed and discharge . . . available with special hood having stainless steel screen on one side and shatterproof sliding glass doors on the other side . . . also available with water recirculating pump. Write for complete details.

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NEWS of Pressure Packaging

Philadelphia Cites Colgate Shave Cream as "Flammable"

THE OFFICE of the City Fire Commissioner of Philadelphia last month ordered a halting of the sales of Colgate-Palmolive's "Rapid Shave" aerosol shaving cream because it "violates the Fire Code of the City of Philadelphia." In a story appearing in the *Philadelphia Evening Bulletin* on Friday, May 13, Deputy Fire Commissioner William J. Eckles said his department's objection stemmed from the use of butane as the propellant, which in effect made the products flammable. He said the chief objection stemmed from the fact that the label on the can did not bear any "flammable" warning.

Shave creams and other foam products hitherto have not been considered as flammable products, but the CSMA's Aerosol Division Scientific Committee has taken the matter up for consideration with a view toward recommending label changes for certain foam products. Normal flammability tests, as recommended by the CSMA and prescribed by the Interstate Commerce Commission, apply principally to spray-type rather than foam products.

If the Philadelphia ruling is not overcome by Colgate's attorneys, or is extended to other shave creams with similar propellants, it could result in at least temporary hardship to a number of marketers. At least five shaving cream marketers currently employ butane or propane propellants to avoid paying patent royalties (for fluorinated hydrocarbon propellant-shave cream formulations) to Carter Products.

At month's end, Colgate spokesmen termed the situation merely a local labeling technicality and said they would demonstrate to the Philadelphia Fire Commissioner that such shaving creams are not in fact hazardous. They claimed that the situation arose not from actual customer complaints, but rather from "competitor activity". Colgate generally tended to play down the incident, as not particularly important.

•

Hallock Joins Va. Smelting

The Aerosol Sales Department of Virginia Smelting Co., West Norfolk, Va., last month appointed Charles S. Hallock to the position of district sales representative in the Northeastern United States. A graduate in business administration from Westminster College, Fulton, Mo., he was with Continental Can Co. and Amchem Products, Inc. prior to joining Virginia Smelting. Virginia Smelting has been in the industrial aerosol field since 1946.

•

British Executive Visits U. S.

M. N. Conville, managing director of the Aerosol Packaging Co., Ltd., Bracknell, England, left the U. S. early in June after a month-long visit to U. S. filling plants, marketers and suppliers' laboratories. Mr. Conville's company, formerly SAFCA Aerosol Filling Co., is a leading British custom filler.

During his visit, which included trips to aerosol firms in Chicago, Baltimore, Wilmington, Bridgeport and New York City, he attended the mid-year meeting of the CSMA in Chicago, May 16-18.

•

Aerocos Completes Expansion

Aerosol Corp. of the South, Arlington, Tenn., custom filler and marketer of Finishing Touch hair conditioner, Fashionette hair spray and other aerosol-packed beauty products, has just completed an expansion program and is now marketing a variety of products through beauty shops on a nation-wide basis, Donald L. Cottam, president, announced recently.

Other officers recently re-elected are: Marvin A. Bienvenu, executive vice president, and Robert C. Cottam, vice president.

The company's plant and general offices are at Arlington, Tenn. Sales offices are maintained in Los Angeles, Chicago, New York and Dallas.

•

Schimmel Moves Headquarters

Schimmel & Co., New York producer of essential oils, aromatic chemicals, and perfumes, last month moved its offices and plant to Route 32, Newburgh, N. Y. The company has been at 601 West 26th Street in New York City since it was established as a subsidiary of the famous German essential oil firm of Schimmel & Co., A.G., Leipsig. The German firm is now a state-run enterprise behind the Iron Curtain.

Gert Keller, president and a one-half owner of the company, declared that the new plant will enable the company to serve its customers more efficiently. He said the new location was chosen for its convenient access to the greater New York area and to provide modern facilities for manufacturing, compounding, and development work.

•

Field Made Colgate VP

Colgate-Palmolive Co., New York, has announced the election of Edward P. Field, Jr., general manager of the Associated Products Division, as a vice-president. He joined Colgate in 1952 as assistant export manager in the Export Sales Department and became export sales manager of Colgate-Palmolive a short time later. He became general manager of the Associated Products Division in 1957.

FTC Cites Chemway Corp.

The Federal Trade Commission has cited Chemway Corp., Mountain View, N. J., aerosol marketer, charging violation of the Robinson-Patman Act. Chemway was accused of giving favored direct buyers larger discounts than it gives competing direct buyers of its "Lady Esther" cosmetics. Specifically, Chemway is charged with giving certain buyers 33⅓% off its suggested minimum retail prices, plus 16⅔% from the remaining price. The latter 16⅔% normally is given only to wholesalers, the FTC charged, and competing buyers are given no more than a straight 40% discount.

In a formal answer, Chemway said the extra discount was conceded only to certain buyers who could perform a warehousing function servicing at least three outlets and agreeing to purchase in quantities above a specified minimum. "Such conduct in no way affects competition, nor does it have any tendency to affect competition or tend to create a monopoly or to injure, destroy or prevent competition,' Chemway said.

•

Luce Joins Plasti-Kote

Plasti-Kote, Inc., Cleveland aerosol paint manufacturers, last month announced the appointment of Harold Luce as Midwest sales manager. His territory will cover Minnesota, North Dakota, South Dakota, Wisconsin, Illinois, Indiana, Kentucky, Michigan, Ohio, Iowa, Eastern Nebraska and Kansas. Mr. Luce will work closely with Plasti-Kote sales representatives in the 13-state area.

According to Elias Shapiro, executive vice president, the new office of zone sales manager is part of the company's new program of intensified sales activities throughout the country. He said similar appointments for other zones will be announced in the near future.

•

Bernardin Names Sales Agents

Bernardin Bottle Cap Co., Evansville, Ind. fabricator of plastic aerosol containers and valve mounting cups, has named Clover Sales Corp., 280 Broadway, New York as its sales representative for aerosol products in the New York, New Jersey, and Connecticut areas. Clover already handles Bernardin's caps.

•

Gen. Chem. Names Woods

Frank J. Woods has been appointed director of sales for Allied Chemical's General Chemical Division, New York, manufacturer of aerosol propellants and insecticide materials. With the division 22 years, he has been heavy chemical sales manager for the past ten. Prior to that he was insecticide sales manager for seven years.

During World War II he served as supervisor of industrial relations for a subsidiary, General Chemical Defense Corp., which was operated for the government in Point Pleasant, W. Va. Mr. Woods joined the division as an insecticide salesman in New York and was subsequently appointed assistant manager of agricultural chemical sales.

•

Revlon Promotes Faberman

Revlon, Inc., New York, last month announced the promotion of Alec Faberman to the newly created post of vice president for administration. In this new capacity he will have the responsibility for developing practical means of reducing operating costs and has authority to institute any constructive steps for advancing efficiency and productivity within the company.

Mr. Faberman has been with Revlon for 13 years, as a vice president and controller for the past year. In the course of his tenure he has served as controller, assistant controller and budget manager.

•

D&O Appoints Welch

Appointment of John M. Welch as a sales representative in its Los Angeles branch office has just been announced by Dodge & Olcott, Inc., New York.

Mr. Welch was recently in New York for a two-week sales training program, during which time he was acquainted with D&O's Perfume, Flavor and Dry Materials Divisions, production and general sales offices. He holds a B.S. in chemistry from Gonzaga University and has been employed as chemist by the Eastman Kodak Co. and Mobil Oil Co.

Warns of Aerosol Paint Use

"Extra precautions" must be taken when painting indoors with aerosol spray paints, C. C. Williams, minister of labor and minister in charge of The Fire Prevention Act for the Province of Saskatchewan, declared on May 9. Taking note of the fact that householders in his province often use pressurized paints, he cautioned that such packages "may contain flammable thinners, which, if sprayed into the air in sufficient concentration, can be exploded by pilot lights, electric lights, or cigarettes." Mr. Williams advised that vigorous ventilation be used with spray cans, and that pilot lights be extinguished.

•

FDA Official Quits Job

Dr. Henry Welch, chief of the Division of Antibiotics of the Food and Drug Administration, resigned under fire last month when it was revealed he had made $287.142 since 1953 for editorship of two antibiotic magazines. Dr. Welch reportedly received a percentage of the receipts from drug advertisements, reprints and extra advertising pages as a partner in the company which published the two magazines.

Dr. Welch's resignation came less than a month before his scheduled disability retirement, and was submitted at a time HEW Secretary Arthur Flemming said the case would be referred to the Justice Department for possible violation of the Civil Service Act. In his letter of resignation, Dr. Welch blamed politics for his troubles, which centered on allegations of conflict of interest before the Senate Antitrust and Monopoly Subcommittee.

•

Bielser Visits United States

M. T. Bielser, production manager of Cia. Brasileira Givaudan, Sao Paulo, Brazil, recently completed a visit with The Givaudan Corp. in the United States. The major objective of his visit was to establish personal contact with plant management and the research and development departments in the U.S.

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Whether you need a
SPRAY, STREAM or FOAM
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Continental's new
PRESSURE-TAB SIDE SEAM
with Tri-Com solder now permits higher pressure than any other 3-piece aerosol.

Continental's improved aerosol can REALLY takes pressure — more than any other 3-piece can being manufactured. The can's unique pressure tab side seam, together with Continental's improved solder method, form the greatest bond stability available.

That's not all—the new can provides greater protection over longer periods... holds higher pressures at elevated storage temperatures... increases the range of propellent mixtures useable in containers... paves the way for expansion in the entire aerosol industry.

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Pacific Division: Russ Building, San Francisco 4
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Minnesota Court Kills FT

The state fair trade law of Minnesota has become the latest to be judged unconstitutional by the supreme court of that state, bringing to 17 the number of states in which fair trade legislation has been ruled out by the state's own courts. The Minnesota law was ruled unconstitutional because it "improperly delegates legislative power to private interests and fails to provide a yardstick" by which retail prices would be set by manufacturers.

The specific case involved a suit by Remington Arms Co. against GEM, Inc., operator of a discount outlet in Bloomington, Minn. Also in the case were Bristol-Myers and the Minnesota Council of Retail Trade Associations as "friends of the court" on the side of the plaintiff.

The court's decision, written by Justice William P. Murphy, states:

"Courts must view with grave concern the exercise of arbitrary power in the hands of unofficial persons.

"Granting legislative power to private persons without a hearing or other safeguard is a practice to be indulged in only when it appears [that] the end the legislature seeks can be accomplished in no other way. This is especially true when the grant [to stipulate prices] is given to the very persons who will benefit most by arbitrary use of that power."

•

GenChem Names Meirowitz

The appointment of Marvin S. Meirowitz as field sales manager for "Genetron" aerosol propellants and refrigerants at Allied Chemical's General Chemical Division has been announced by the company's New York headquarters. His territory will be the New York metropolitan area. He has been with the division five years as a "Genetron" salesman.

Mr. Meirowitz holds a B.A. degree from McGill University, Montreal.

•

Hardware Show Is Sell-Out

The National Hardware Show, scheduled for Oct. 10-14 at the New York Coliseum, is already 96% sold out, according to Frank M. Yeager, managing director of the show. He said every available foot of exhibition space would be used for the show, which is said to be the world's largest showing of hardware and allied products.

•

C. H. Jefferson Promoted

C. H. Jefferson has been appointed chief of the Feed, Fertilizer and Pesticide Section of the Plant Production Division, Canada Department of Agriculture, Ottawa. A familiar figure at meetings of the Chemical Specialties Manufacturers Association and the Canadian Manufacturers of Chemical Specialties Association, he had been supervisor of the pesticide unit of the Feed, Fertilizer and Pesticide Section since 1957. In his new post he succeeds C. R. Phillips, who had been named director of the division.

Mr. Jefferson, a graduate of Macdonald College, joined the Plant Production Division as an inspector in New Brunswick and was transferred to Ottawa in 1948.

Preiser Named PFW VP

Polak's Frutal Works, Inc., Middletown, N. Y. producer of essential oils and aromatic chemicals, has elected Marvin F. Preiser assistant vice-president in charge of production. For the past 14 years he was associated with PFW's Flavor and Production Departments. He is a member of the Institute of Food Technologists, the Flavor Chemists Society, the Flavor Extract Manufacturers Association, and the American Chemical Society.

•

Parks to Shulton Board

Richard N. Parks has been elected to the board of directors of Shulton, Inc., manufacturers of "Old Spice" shaving and grooming products, women's toiletries, pharmaceuticals and fine chemicals. He has been vice president sales since May, 1958. He joined Shulton in 1948 to take charge of market research and sales analysis. He was appointed manager of the Eastern Division in 1952 and general sales manager in 1956.

St. John's Offers New Courses in Aerosol Technology

THE GRADUATE School of Arts and Sciences of St. John's University, Jamaica 32, N. Y., last month announced two new aerosol courses open to both graduate and special students. Both sessions will begin on June 13 and end on July 15.

The first of the courses, designated "Ph.S. 209, Aerosol Technology," is described as "a detailed consideration of the history, development, theory, principles, component parts, formulation and development of all types of pressurized products. Special attention will be given to the physicochemical properties of the propellants and their behavior." The second, Ph.S. 210, "Aerosol Technology Laboratory," will "consist of the preparation of various pressurized products of the liquefied and compressed gas type as well as the testing and control of such products. Experiments illustrating and detecting the behavior of the propellants will be included, as well as those concerned with the development of newer products. Additional experiments will be included which will involve original research on the part of the student." Each course is worth three graduate credits.

The lecture course will be given on Monday, Tuesday and Wednesday evenings from 5:30 to 8:10 p. m., and the laboratory will be in session on Monday through Thursday from 1:30 to 4:30 p. m. Both lectures and laboratory will be held on the university's Jamaica campus.

Special students are classified as either those possessing a B.S. degree, who may get academic credit, or those with or without a degree who may obtain a certificate. Fees are as follows:

Graduate students.....$32 per point
Special students (for credit), $32 per point
Special students (no credit), $32 per point
Laboratory deposit $20
University and registration fees...$10
Graduate students .....$32 per point

Can Makers Honor CSMA

Roger F. Hepenstal (right), 1960 president of Can Manufacturers Institute, at the CSMA's midyear meeting presented an inscribed gold-plated aerosol can to George Fiero, president of Chemical Specialties Manufacturers Association, in appreciation of the CSMA's efforts on behalf " . . . of the newest and fastest growing uses of metal cans." Aerosol cans, Hepenstal observed, are the result of " . . . the fertile imagination of the men in the chemical specialties industry . . . (who) caused a resurgence of glamour in the can manufacturing industry, 150 years old this year."

As 1960 president of C.M.I., Mr. Hepenstal briefly traced the development of the canning and can manufacturing industries, the joint discoveries of Nicholas Appert, who wrote a treatise on the preservation process and Peter Durand, who patented the "tin canister" itself.

The aerosol, he noted, was greeted with unprecedented public acceptance due to the research and development of the chemical specialties manufacturers who transformed the bulky, single-purpose bug bomb of World War II into the light, modern latter-day miracle which today dispenses over 200 different products.

The gold-plated aerosol can presented to CSMA is intended, according to Mr. Hepenstal, " . . . not simply as a symbol of past achievement but as a symbol of the golden future that awaits our mutual efforts."

•

MM&R Marks Anniversary

Magnus, Mabee & Reynard, Inc., New York producer of essential oils and aromatics, this year is celebrating its 65th anniversary. Foundation of the present company was laid in 1895 when Percy C. Magnus, Sr., father of the current president, was made a partner in McKenzie Bros. & Hill, small importer of essential oils. Among the accomplishments of the company was the establishment of what is said to have been the first quality control laboratory in the essential oil industry in 1907. In the same year the company was reincorporated as Magnus, Mabee & Reynard, Inc.

Currently, the firm is headed by three of the sons of P. C. Magnus, Sr. P. C. Magnus, Jr. is president and Joseph Baird Magnus and Robert Burke Magnus, Sr. are executive vice-presidents. A member of the third generation, Robert Burke Magnus, Jr. is assistant treasurer and purchasing director.

•

Cuba Changes Pkg. Rules

The Cuban Government, with a view toward cutting down the U. S. share of the Cuban consumer market, this summer will put into effect a ruling that all drug items imported into Cuba will have to be either packaged or repackaged in that country. Affected by the ruling, according to the U. S. Commerce Department, will be all pharmaceutical, biological and organotherapeutic products for human or veterinary use.

Companies requesting exemption from the new packaging law will have to make application to the Cuban Ministry of Commerce.

Fine Resigns From Plasti-Kote

Herbert Fine, founder and president of Plasti-Kote, Inc., Cleveland aerosol paint manufacturers, has announced his resignation as president of the firm. The company was recently acquired by New England Industries, Inc., 120 Wall Street, New York. Elias Shapiro, executive vice president, will remain with the firm as chief operating officer in Cleveland.

According to Mr. Shapiro, Plasti-Kote operations continue to expand in both the United States and abroad. He reports the aerosol paint market will see tremendous growth in 1960, with aerosol paint products acquiring even greater prominence in the aerosol industry.

•

CSMA's Mrs. Sullivan Retires

Mrs. E. D. Sullivan, who has been associated with the executive staff of the Chemical Specialties Manufacturers Association for the past 25 years, has retired. She originally came with the CSMA at the time John Wright was secretary of the preceding association, the N.A.I.D.M. and she later served as N.A.I.D.M. secretary herself. She has been a familiar figure at CSMA Conventions.

Perfumers' Meeting

(*From Page* 44)

the fact he dislikes crowded enclosed places almost to a point of having claustrophobia. These types are "good converts for the fragrance industry," and can be taught to use "fragrance as a necessary adjunct of good grooming."

3. The linear type. Tense and restrained, he avoids social gatherings, is irregular in meals and has bad sleeping habits. This type, Mr. Moeller suggests, shies away from fragrance and will use it only if the scent is subdued. If not intellectually curious, this type might develop an aversion to odors.

Mr. Moeller pointed out that most individuals do not fall into only one of these types but will retain traits from at least two of them. He advised that selection of an odor preference panel for product perfume selection should include representatives of all three groups, but that the first category (representing the "choice" consumer) should predominate.

ONLY in recent times have perfumes played a role in selling men's toiletries, E. R. van Liew of Givaudan-Delawanna, Inc., declared. He pointed out that the puritanical influence of Oliver Cromwell coupled with the business and social incursions of women have made the American male more jealous than ever of his masculinity. Only in the last few years has he been able to accept perfumes as an adjunct to the normally functional qualities (healing, deodorizing and grooming) of the toiletry products he buys. "Fragrance has been a secondary feature and will most likely continue to be for some years to come."

(*Continued on Page* 83)

presenting Richford's new

Ambassador

now available with the beautiful Futura Cap in brilliant Goldcote or other finishes

Sizes available: 1½ dram, 2 dram, 1/2 oz., 1 oz., 2 oz., 4 oz.

Now available with the beautiful new Ambassador cap shown here.

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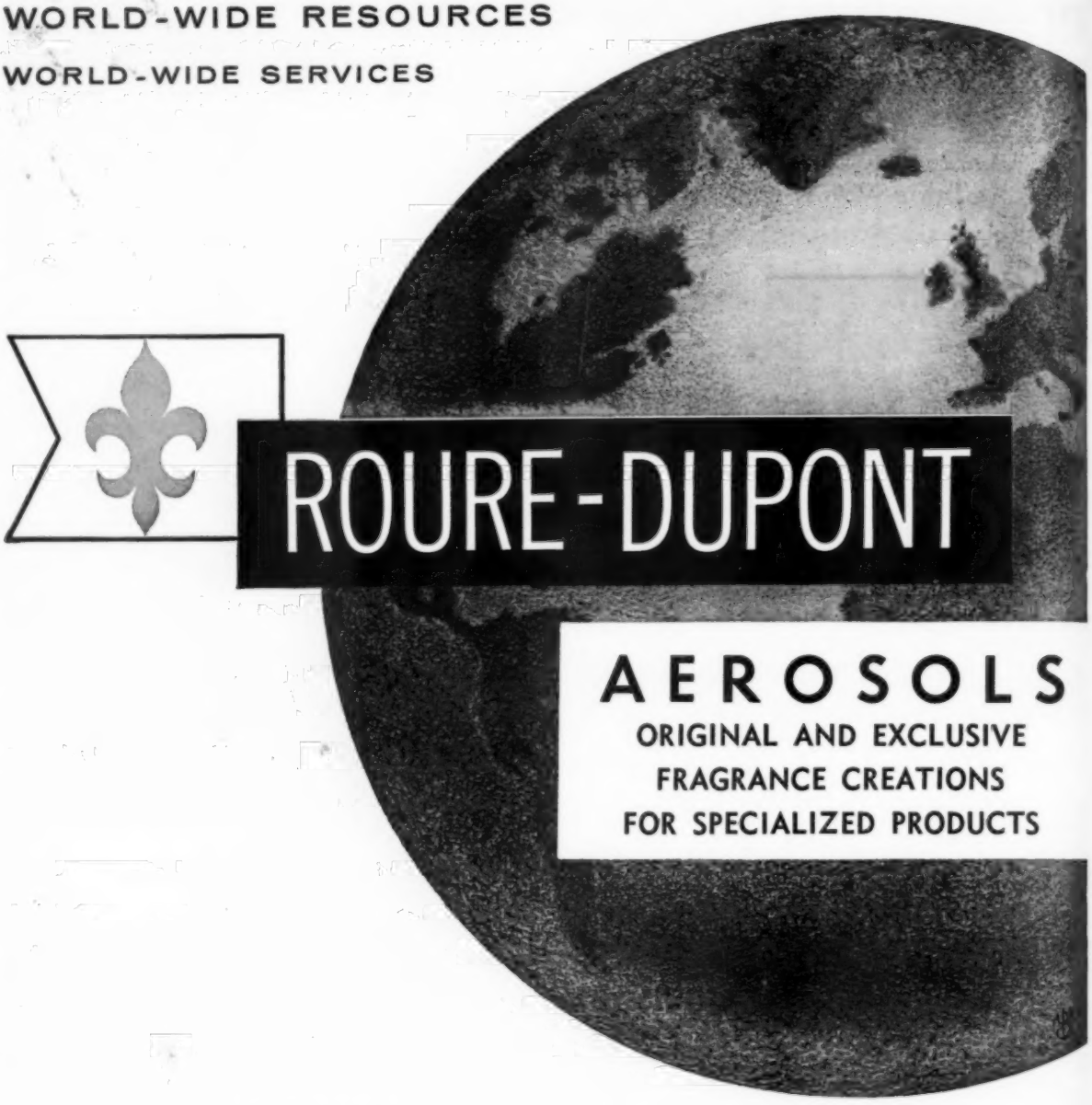

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Store Executive Warns of European Product Incursions

THE U. S. perfume industry would do well to become more vociferous in urging an end to the "bootlegging" of European products and other "dissipations of price value" of the U. S. product, Adam L. Gimbel, president of Saks Fifth Avenue, New York department store, told the Fragrance Foundation at its annual luncheon on May 10. He said the "mail order business from Europe" is doing the American market little good, because the products are often inferior and consequently the entire perfume industry tends to suffer. He urged that the Fragrance Foundation and other associations work closely with similar groups in Europe to find out whether these practices can be curbed.

Several times in his address Mr. Gimbel urged that the Fragrance Foundation take the lead in insuring that the true value of the fragrance be kept to a recognized standard of excellence in every product. He said in many perfumed products there seemed to be "a great deal of carelessness" in protecting the quality of the perfume and of insuring a standard of its strength and odor qualities.

He said that the retailing business welcomes the products of the perfume industry in its stores and that perfumes make up probably the most profitable part of the retailing field. He pointed out that the perfume product requires active marketing to compete with the countless other products for consumer attention.

"The U. S. fragrance industry would do well to educate the buying public on the *true* value of fragrance on an everyday basis. This should be repeatedly emphasized, so that the U. S. per capita use of perfumes—now low in comparison with some of the older European countries—will reach its potential level." Pointing out that consumer spending for perfume products already exceeds $130 million per year, he said that the greatly increased spending power in the United States, coupled with the large rise in population, would broaden the potential market considerably. "Within a few years, if the population curve continues upward at its current pace, the fragrance industry will have five customers where there now exists only one."

Another speaker at the Fragrance Foundation luncheon was Ilka Chase, authoress and television personality, who congratulated the fragrance industry on its "sweet smell of success."

•

Colgate Appoints Vrindten

The appointment of Joseph G. Vrindten to its Research and Development Department has been announced by the Colgate-Palmolive Company's Household Products Division.

Mr. Vrindten, who has been assigned to the Bar and Cleanser Evaluations Group at the Colgate-Palmolive laboratories in Jersey City, joined the company in 1959. He was a member of the industrial engineering department staff and also worked in the Jersey City plant control laboratory prior to his appointment to the Research and Development Department.

•

Dennis Joins Crown Sales

William B. Dennis, Jr. has been appointed district sales manager of Cincinnati, it was announced last month by Harvey Tull, regional sales manager for Crown Cork & Seal Co., Philadelphia. Mr. Dennis joined Crown in 1955 as a sales representative, originally in Florida and more recently in Cincinnati.

•

D&O Awards Food Scholarship

Theodore P. Labuza, a student at Massachusetts Institute of Technology, Cambridge, Mass., has been presented with the 1960-61 $1,000 Dodge & Olcott scholarship to encourage students to take undergraduate work leading to a bachelor's degree in food technology. He was selected by a special committee set up by the Institute of Food Technologists.

•

Air Reduction Names Two

Patrick R. Beck and Donald A. Smith have been assigned to the Chicago office of Air Reduction Chemical Co. as sales and development representatives. Mr. Beck will cover Indiana, Michigan, and Ohio. Mr. Smith will cover Illinois, Wisconsin, Minnesota, Iowa, and Kansas.

Mr. Beck was formerly a sales engineer with Spaulding Fibre Co. He joined Air Reduction in 1959 and was assigned to the company's technical sales laboratory at Bound Brook, N. J. Mr. Smith, also from the Bound Brook laboratory, was with the sales staffs of Victor Chemical Works, Commercial Solvents Corp., and Carter Products Co.

•

Eve Henriksen Joins Dana

Dana Perfumes Corp., New York, last month announced the appointment of Mrs. Eve Henriksen as director of packaging. Her responsibilities will include new packaging and product development, and she will assist with merchandising and promotional projects. Formerly associated with Hudnut-DuBarry in the capacity of packaging coordinator and stylist, she was recently a design consultant in a free-lance capacity.

•

AHP Elects 2 VP's

American Home Products Corp., New York, has elected William F. Laport executive vice-president and Kenneth A. Bonham vice-president. Mr. Laports, with American Home Products for 22 years, was elected a vice-president in 1957. He had been president of Whitehall Pharmacal Co., a subsidiary of American Home since 1948.

Mr. Bonham was elected president of Whitehall Laboratories, a division of American Home, in 1957. Prior to that he had been the subsidiary's executive vice-president and general manager.

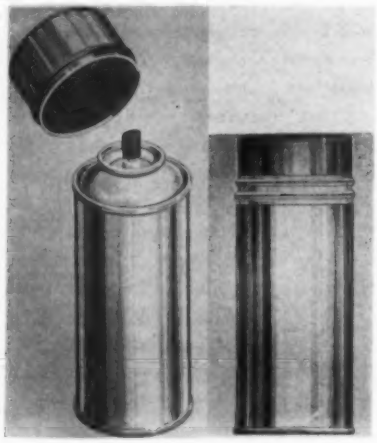
•

Schering Buys Argentine Plant

Essex (Argentina) S.A.I.C., Argentine affiliate of Schering Corp., Bloomfield, N. J., pharmaceutical manufacturer, has purchased a pharmaceutical plant in Buenos Aires. Built in 1956, it was bought from Laboratorios Phoenix for $750,000.

Equipment-Processes-Bulletins-

"Snap Lock" Aerosol Can



A new pressure can that offers impressive savings for its users was shown by the Canco Division of American Can Co. (New York) at the mid-year meeting of the Chemical Specialties Manufacturers Association in Chicago May 16-18. Of recent development, the "Snap-Lock" pressure can reportedly features a cleanness of design, facilitates stacking for counter or floor display, and is adaptable to tamper-proofing.

Also showing the new cap container in Chicago was Sterling Seal Co.

"The users of pressure cans who adopt this development will be able to cut costs dramatically," according to C. S. Stephens, the company's product manager for non-food containers. "This can makes it possible to employ a single-shell overcap instead of the expensive double-shell caps now in vogue. The new-type caps will be available from a choice of manufacturers who produce metal and plastic caps especially fashioned to fit Canco's "Snap-Lock" pressure cans," he said.

"Not only does the new can utilize a simpler overcap, but it eliminates distortion of the seam area—a condition which may invite leakage problems," he added. He said too that the convenient stacking advantage of the new aerosol stemmed from designing the flat-top cap with a diameter slightly smaller than that of the can's bottom. "Snugger nesting of this sort," he said, "opens the way for easy self-service selling with resultant bigger sales potentials in the market."

"The beaded overcap enables the user to make his aerosol tamper-proof. A plastic band sealing overcap to can prevents shoppers from experimenting with the aerosol in the store. It also insures against priced cap-switching."

Mr. Stephens concluded that while Canco is confining present production to the six-ounce can size, the Division is equipping to produce 12-ounce cans.

•

New Aerosol Test Chambers

A new line of walk-in aerosol test chambers for shelf testing of finished products has been announced by Labline, Inc., 3070 W. Grand Ave., Chicago 22. The rooms have two temperature ranges: ambient to 140° F. and 0° to 140° F., with accuracy said to range within plus or minus 1° F. They are constructed in panel form and shaped knocked down to permit easy access through doors.

All models have fully enclosed heating elements and have plenus chamber construction which eliminates all interior ducts and louvres. They come in the following sizes: 6 x 6 ft.;

6 x 8 ft.; 6 x 10 ft., and 6 x 12 ft. The inside working height is seven feet and all models have a 12 x 12 inch Thermo-pane viewing window. They are constructed of heavy gauge aluminum inside with corrugated aluminum floor plates. Circline fluorescent lighting, lifetime-lubricated exhaust fans are included and shelving can be supplied in a variety of styles.

•

List New Lemon Fragrance

"Lemonol A. P." is a new lemon fragrance developed recently by Aromatic Products, Inc., 235 Fourth Ave., New York. According to the company, the fragrance has "a power and lasting quality which permit the use of smaller than normal proportions in most products."

•

USDA Issues Insecticide Guide

The 1960 revision of the handbook on insecticide recommendations has been issued by the U. S. Dept. of Agriculture. Called "Insecticide Recommendations of the Entomology Research Division for the Control of Insects Attacking Crops and Livestock," it contains information about use of insecticides, label information, etc. It is available for 65 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

# of IMPACT Extruded, All-Aluminum SEAMLESS AEROSOL CONTAINERS

Glamorize your products in feather-light, one-piece, seamless aerosol containers in sizes to fit and capture new markets!

IMPACT CONTAINERS CREATE NEW MARKETING IMPACT . . . Natural satin aluminum finish, painted or four color lithographed, adds that NEW LOOK to make your products MOVE.

FEATHER-LIGHT . . . Only 1/3rd the weight, easier to use, makes large size packages practical, cuts shipping costs. 37-ounce size weighs only 4 ounces!

HIGH STRENGTH . . . IMPACT seamless design offers new concepts in pressure packaging—more product in the can! Minimum burst 300 psi standard — 600 psi also available. Integral curled lip accommodates standard 1" aerosol valves.

NO RUST RINGS LEFT ON SHELVES . . . IMPACT keeps its brilliant sales appeal and beauty forever.

NO SEAMS TO LEAK . . . Cuts rejects, increases shelf life, reduces costs, increases safety, — more satisfied customers.

FOR YOUR PRODUCT . . . IMPACT containers are perfect for foods, paints, cosmetics, pharmaceuticals and a host of other products. Epoxy interior coatings available.

Typical 4-color Litho

Contoured to fit hand

Write or Phone Buffalo GArfield 2676 for complete data, delivery and prices.

IMPACT CONTAINER CORPORATION
ALDEN, NEW YORK
Box 907, Sta. C Buffalo, N.Y.

Send full information about IMPACT extruded all-aluminum seamless aerosol containers to:

Name .....

Concern .....

Street ..... City.....

U.S.I. ANHYDROUS S.D. ALCOHOL FOR AEROSOLS

Water can be your worst enemy if you produce hair lacquers, colognes, perfumes and other aerosol formulations. Moisture can hydrolyze propellants . . . promote corrosive conditions . . . upset formula balance . . . cause valve clogging . . . lose sales.

For products which must avoid water and that require the excellent solvent properties of ethyl alcohol, U.S.I. offers all specially denatured alcohol formulas in anhydrous grades. U.S.I.'s anhydrous S.D.A.-40, widely used for cosmetics and toiletries in aerosol form, has a minimum ethyl alcohol content of 99.9%.

With U.S.I. anhydrous formulas, water-insoluble ingredients won't precipitate out. Their outstanding compatibility with a wide variety of aerosol propellants and ingredients contributes to a steady spray rate . . . promotes even particle distribution. They are free from objectionable odor and low in toxicity.

U.S.I. anhydrous specially denatured alcohol formulas are delivered promptly from our nation-wide distribution points. And our Technical Service representatives are ready to help on any specific aerosol problem you may have. Write for technical data and prices.

U.S.I INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N. Y.
Branches in principal cities

DuPont Introduces New Plastic Netting for Aerosol

A NEW type plastic netting, called "Vexar," has been introduced by the Film Department of E. I. du Pont de Nemours & Co., Wilmington (see front cover). The material is manufactured by an exclusive process that extrudes polymers directly in net form through a single operation. In this way, it is said, each strand intersection becomes an integral part of the material, even stronger than the individual strands—in contrast to interwoven or heat-sealed netting where joints are made after the material is extruded.

The patented development is a British one, to which Du Pont acquired U. S. rights last year. Principal advantages claimed for the netting are its variety in mesh sizes, filament diameter, strength, stiffness and color. It is reported to retain the basic characteristics of polyethylene resin, including chemical inertness, flexibility and resistance to moisture, rot and mildew. Mesh size can be varied from 16 strands per inch—smaller than window screening—to more than an inch between strands. Though principal use is expected to be for produce bags, the netting is expected to find use as a protective covering for aerosol cans. The bag made of netting is slipped over the container and then shrunk tightly under the bottom by a blast of hot air. Du Pont points out that not only does the jacket enhance the appearance of the container but it prevents shoppers from sampling the product before purchase—an important factor in selling aerosols and cosmetics through self-service outlets.

ConCan Unveils Aluminum Unit

A four-ounce, seamless aluminum pressure can has been developed and is being offered by Continental Can Co., New York. The new aluminum container is said to offer unique advantages as a pressure package: a combination of lightness and strength, small diameter for easy handling, greater compatibility with some products than steel, attractive appearance and excellent resistance to rusting.

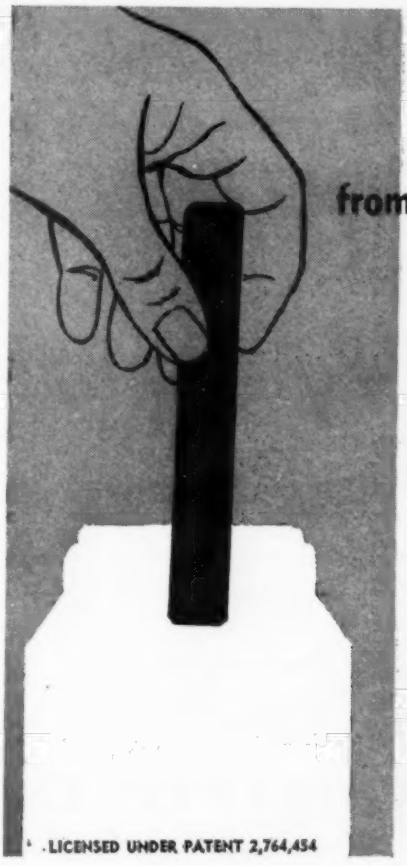
Besides the physical advantages of aluminum, the smooth, seamless exterior of this round, two-piece extruded pressure container provides a surface especially suited to multicolor, wrap-around lithography. The lithographing process includes a base coat, up to four-color printing and a protective coat of varnish overall. Inside of the can comes either plain or enameled.

The four-ounce container has a standard one-inch opening to accommodate the basic valve designs: spray, stream and foam. Bottom end is double-seamed to the extruded body.

•

Laub Offers New Filler

Laub Engineering Co., 244 N. San Marino Ave., San Gabriel, Calif., has announced a new automatic liquid rotary filler for use with containers from two-ounces to two gallons. Called the "30/60 automatic liquid rotary filler," it can be purchased as either a 30 or a 60-head filler. One of features of unit is quick-changeover of product contact parts. Unit fills bottles by vacuum and cans by pressure.



SNOW from a SOLID STICK

All the solids are formulated in this single stick which you simply drop into your container before adding your propellant and valve.

You get these important advantages:

- Amazingly simplified production process. No dust or boil-over. No mixing of powders.
- Gratifying savings in costs.
- Precision cold or pressure filling.
- Standard colors are WHITE, RED, and BLUE. For special colors, please send sample for matching.

For further information and samples, write to

BALTIC CHEMICAL CO., INC.
115-119 Fourth Ave., Brooklyn 17, N. Y.
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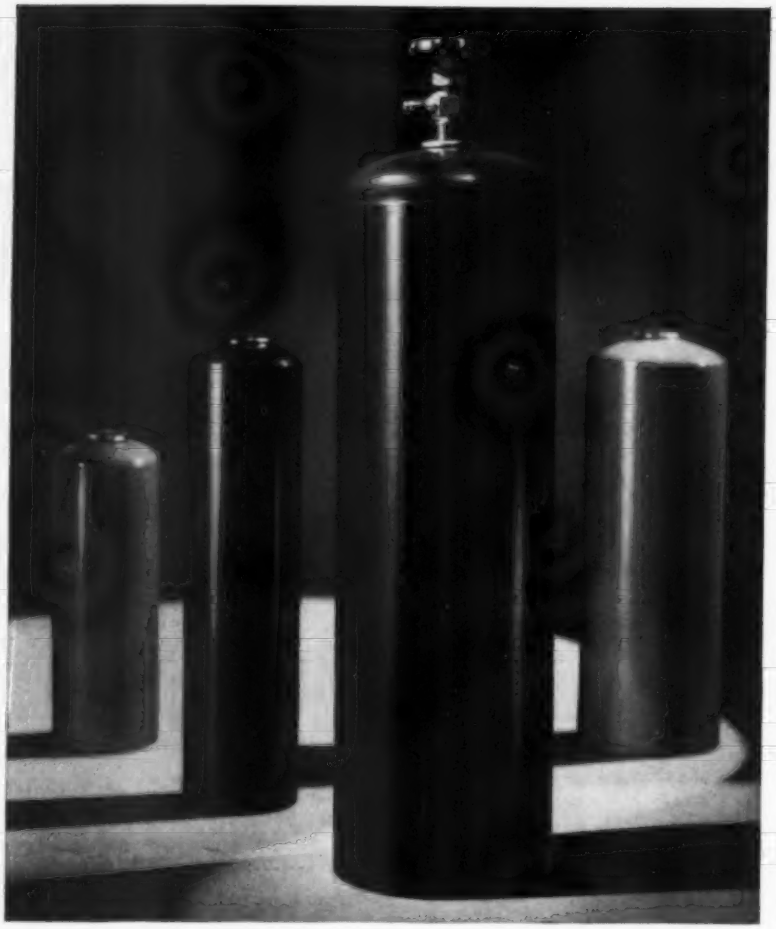

Left to right—TMC 2, 3, 10 and 5 lb. Size Disposable Cylinders

Now make every sale a BIG sale

Big capacity, greater convenience, more uses, more profit per sale,—now made possible with these...

10 POUND WATER CAPACITY SUPER KING SIZE DISPOSABLE CONTAINERS

They make aerosol convenience practical for business, industrial, institutional, agricultural and other volume users.

Other standard TMC King Size Cylinders include 2, 3 and 5 pound water capacities. Working pressures up to 240 psi—ICC approved.

Write for complete information and prices on TMC Cylindrical and Spherical containers. Give quantities and deliveries.

TUBE MANIFOLD
CORPORATION
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Aluminum Cans Offered

One-piece, seamless aluminum aerosol cans are now in full production by the United States Can Corp., a subsidiary of Victor Metal Products Corp., Newport, Ark. According to Robert D. Tiberiis, general manager, the units will be sold at the equivalent of steel prices, or lower. He points out that the lighter weight, absence of seams, and adaptability to lithography and anodizing will make this type of container particularly suited for aerosol packaging.

The company's ability to produce the cans at low prices is attributed by Mr. Tiberiis to the experience acquired in developing an automatic, efficient manufacturing process. A companion company, Aluminum & Chemical Corp., also in Newport, supplies United States Can with the aluminum slugs from which the cans are punched.

He predicted a large market for the competitive-priced aluminum containers, which are being produced at U. S. Can's $2 million, 32,000-square-foot plant in Newport. In full production, the plant will produce a total of 125 million cans annually.

•

Vertical Case Compressor

Designed to conserve valuable floor space and to elevate cases to a higher level, a vertical compression unit has been developed by Emhart Manufacturing Company's Portland (Conn.) Division. Maximum case size handled by the unit is 20½" long, 14½" wide and 15" high. Minimum case size is 10" long, 5½" wide and 5" high.

Designated the "Standard-Knapp Type SK677 Vertiseal," the sealer is supplied in a minimum discharge elevation of 8 feet. It will be made as high as 18 feet, in increments of 2 feet. It is designed for use with Standard-Knapp gluers.

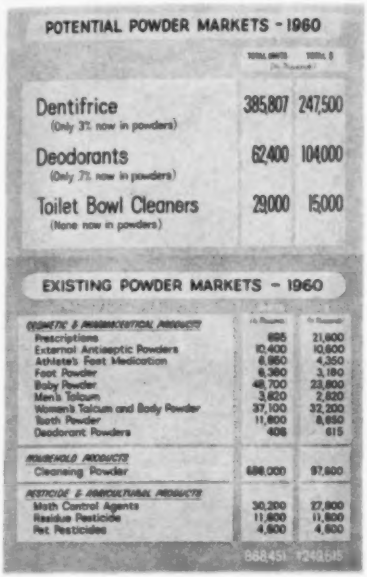
•

D&O Issues New Price List

A new price catalog of its essential oils, aromatic chemicals, and specialties, and certified colors, has been issued by Dodge & Olcott, Inc., 180 Varick Street, New York 14. The 36-page booklet includes descriptions and uses of various products.

Husted Calls Powder Potential Huge

THE AEROSOL industry has one huge potential market, that of powders, which is relatively untouched, E. E. Husted of Union Carbide Chemicals Co., New York, told the Aerosol Division of the CSMA on Wednesday, May 18. He reported that Union Carbide's laboratory had successfully formulated a number of test products with solids in excess of 25%.



Using the charts shown above, Mr. Husted concluded that powders comprise a market potential for the aerosol package of easily ten million units, with a possibility of taking an even bigger cut of the total powder product market of 800 million units.

Using tooth powder to illustrate one promising possibility, Mr. Husted demonstrated a pressurized tooth powder formulation which employs a plastic baffle to direct the powder spray. He pointed out that some people prefer powder, and no improvement of the paste package has persuaded them to convert their preference to paste.

Other particularly promising product categories, Mr. Husted suggested, are athlete's foot medication, foot powder, baby powder, toilet bowl cleaner and deodorant powders. ★

Kintner Warns

(*From Page 26*)

what you can prove." He quoted the FTC Guide entitled "Guarantees As a Misrepresentation," as follows:

> "Guarantees are often employed in such a manner as to constitute representations of material facts. If such is the case, the guarantor not only undertakes to perform under the terms of the guarantee, but also assumes responsibility under the law for the truth of the representations made."

Mr. Kintner then outlined the protection afforded small manufacturers under the Robinson-Patman Act. He said the primary objectives of the act are "(1) to prevent large buyers from using their economic power to buy at prices more favorable than prices granted to less powerful competing purchasers, and (2) to prevent competing sellers from granting such discriminatory prices to buyers — where the effect of such discrimination may be to substantially lessen competition or tend to create a monopoly in any line of commerce, or to injure, destroy or prevent competition with any person who either grants or knowingly receives the ben-

Max Factor Names Mann

Marvin L. Mann has been appointed director of United States advertising for Max Factor & Co., Hollywood, Calif. cosmetics marketer. For the past 22 years, he was with Edward H. Weiss and Co., Chicago advertising agency, as vice-president and a member of the board of directors.

■

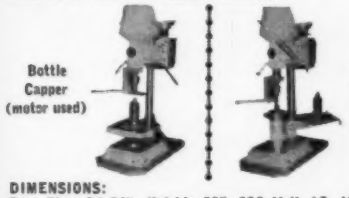
Colton Moves Eastern Office

The Arthur Colton Co., Detroit maker of ingredient fillers and other packaging equipment, last month relocated its Eastern branch office at 566 Grand Ave., Englewood, N. J. Telephone number of the new office and showroom is LOwell 8-7354. Arthur Colton had been in its Manhattan office for 35 years.

NEW COMBINATION
CAPPER
FOR AEROSOLS

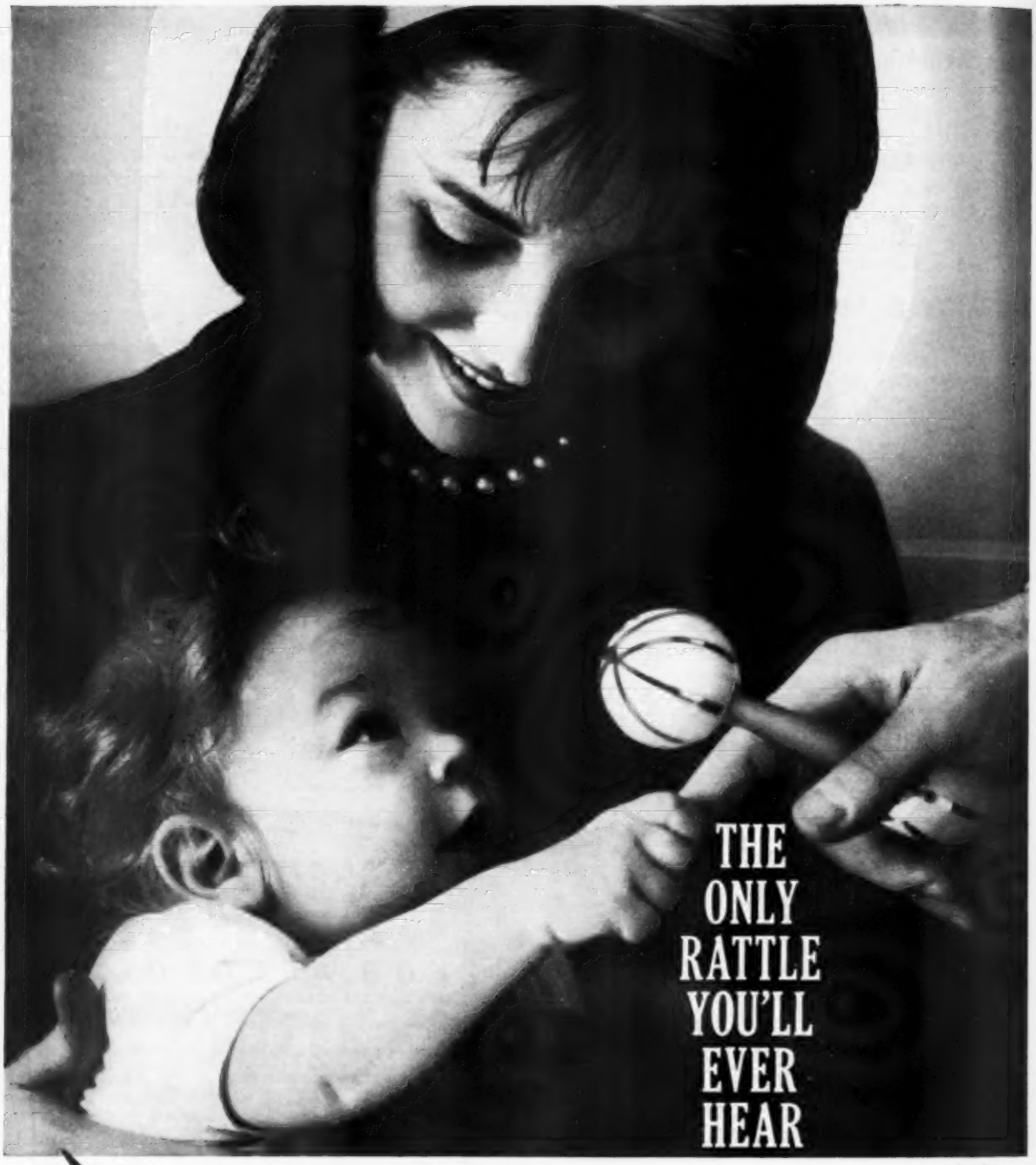
BUILDER'S NEW "Combination Drill Press Capper" for Aerosol Bottles and Cans has a Production Rate of approximately 2 per minute with Aerosol Bottles . . . 8 per minute with Aerosol Cans.

BUILDER'S CAPPERS can be used as a DRILL PRESS where Aerosol Production does not employ it Full time. Foot Switch included for use when Capping Bottles.



DIMENSIONS:
Base Size: 14x24", Height: 30", 110 Volt AC, ¼ HP Motor
Aerosol Bottle Capper.....$208.00
Can Capping Attachment.....$160.00

BUILDERS PRODUCTS
Division of BUILDERS SHEET METAL WORKS, Inc.



Smooth as a summer breeze, but about 600 mph faster. That's the KLM Royal 8 jet, now flying non-stop New York to Europe. And the Dutch see to it that every fleeting moment is extra special, even for the tiniest passengers. It's part of the personally efficient service you always get on KLM. Reserve now, First or Economy Class. See your travel agent (professionals plan better trips). Or call the nearest KLM office. KLM Royal Dutch Airlines, 609 Fifth Avenue, New York 17, N. Y.

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THE WORLD OVER
KLM
ROYAL DUTCH AIRLINES

DC-8 Jet

efits of such discrimination, or with customers of either of them."

Mr. Kintner warned that there will be more and more enforcement of the Robinson-Patman Act.

MISUSE of, say, insecticides in a food plant is not really a consideration under the Food Additives Amendment, J. K. Kirk, assistant to the commissioner of the Food and Drug Administration, Washington, told a general session of the CSMA at the association's mid-year meeting on May 18. Mr. Kirk explained that the amendment was originally passed because food marketers wanted definite reassurance about their packaging components.

For the aerosol industry, Mr. Kirk advised, propellants, can liners and certain valve fitments will come under consideration under the amendment. Some can liners have already appeared on the "Generally Recognized As Safe" list, because can makers have long anticipated the amendment and have obtained prior sanctions. But other can liners do not have prior sanctions and should be cleared prior to usage in aerosol cans, he said.

Mr. Kirk emphasized that for a food product "there is no real way to tell about migration except by extensive laboratory analysis." He said that the law refers only to the article, and there is no basis for relief of components or other adjuncts to product. Prior sanctions, he advised, remain valid only for the specific uses designated in the original petition. "There is no way to revise a prior sanction to make it include some new usage."★

New Corrosion Data

(*From Page* 26)

the presence of benzoyl peroxide as a catalyst with the formation of chloroform, hydrogen chloride, acetone, hexachlorethane, and other products. On the basis of these results they postulated a free radical mechanism for the reaction."

Dr. Sanders also noted the work of Heberling, McCormack and of Witjens, and concluded: "If the reaction between propellant 11 and ethyl alcohol were catalyzed by free radicals, as seemed evident from the earlier work, this offered the hope of preventing the reaction by the addition of suitable stabilizers." Other than the limited effectiveness of oxygen, he did not disclose the nature of the inhibitors which DuPont found useful. He said they would be discussed in a technical report to be issued later by the company's "Freon" Products Laboratory.

Significance of the research, it was explained, rests in the understanding of the mechanism by which corrosion takes place in formulations containing trichloromonofluoromethane and ethyl alcohol. Dr. Sanders determined the mechanism by isolating dichlormonofluoromethane tetrachlorodifluoroethane, acetaldehyde, acetal, ethyl chloride, and hydogen chloride from the free radical reaction.

He explained that the experiments were carried out in glass in order to avoid side reactions that might result if metals were present. "However," he pointed out, "in a few experiments carried out in tinplate containers, acetaldehyde, acid, and dichloromonofluoromethane were identified as the reaction products, thus confirming that the mechanism postulated on the basis of the reaction in glass also aplied to aerosol formulations packaged in metal containers.

"Free radical initiators could be present in aerosol formulations from many sources. The active ingredients used for aerosol formulations seldom are pure compounds. They could contain traces of peroxides, metallic salts, and many other known free radical catalysts. Solvents could also be a source of free radicals. Alcohols, for example, may be oxidized by air and form aldehydes. Aldehydes are known to form peroxides. Many other compounds, such as ethers, unsatu-

rated hydrocarbons, etc. are also known to form peroxides."

Dr. Sanders discussed the role of oxygen in the reaction in some detail. "In low concentrations, oxygen initiates the free radical reactions between ethyl alcohol and trichloromonofluoromethane; in higher concentrations, oxygen *inhibits* the reaction. This effect of oxygen undoubtedly accounts for many of the inconsistencies that have been encountered in corrosion studies. Actually, this effect is a known property of oxygen. Oxygen is a diradical and can initiate free radical reactions. In larger concentrations, it may form unreactive peroxides and thus interrupt a chain reaction."★

Propane "Intriguing"

(*From Page* 26)

ume ratio against the same composition at 70° F."

By means of distillation studies, the authors determined the following about the relative danger of leaking containers: ". . . Assuming that the puncture in the container is of a type that does not conform to Graham's Law or Ziebold's Law, e.g., is independent of molecular weight or progressive absorption partitioning, generally the tests indicated that the vapor released from such units will contain from 80 to 90% propane, with the remainder mainly propellant 11. The vapors from such leaking cans will remain in the flammable category until the can comes to equilibrium at room temperature, or almost so; depending upon the composition. At this point the liquid will contain only 2% to 3% residual propane."

In flammability tests, the authors pointed out, the extreme volatility of propane almost always will cause the modified Tagliabue open cup test to fail. "Vapors of propane and propellant 11 which contain about 13% or more of propane are flammable in air. From a distillation graph it is seen that the propane content of the liquid phase must be about 1½% or less for the vapor to contain less than 13% propane. Thus the test will fail when over 1½% propane exists in the liquid at 20° F. or less. Since this maximum is dependent upon the ratio of propane and propellant 11, dilutions with a non-volatile material such as odorless mineral spirits will decrease the 1½% tolerance down to ½% or less, before the vapor pressure becomes too low to support flashing."

In conclusion, the authors suggested that "one of the results of this study is that we may now designate the areas which contain all nonflammable compositions of propane, propellant 11 and odorless mineral spirits system. It then becomes possible to stipulate specific formulas which are the least expensive within such areas."★

TGA, SCC Meetings

(*From Page* 38)

held its semi-annual Scientific Meeting at the Hotel Biltmore in New York on May 12. Herman Bogaty of the Toni Co. outlined the part that secondary bonds in keratin play in the waving process. He said that agents which promote the hydrogen bond rupture (so fundamental in permanent waving) can enhance the waving action of mercaptans or, under special circumstances, can wave in the absence of reducing agents. He explained that salts which increase the hydrogen bonding in hair tend to depress the waving activity of mercaptans.

Dr. Norman Orentreich, New York specialist on balding and other hair problems, revealed that he has found little evidence to indicate that even strong cosmetics could cause permanent hair loss. "There is usually another cause of hair loss," he said, "and the cosmetic is coincidental and *not* causative." One possible area of trouble, he advised, is hair dye, which can cause a secondary bacterial infection of the scalp.

The solvent has an important effect on the ultraviolet absorption qualities of a sunscreen, Dr. Sidney Rie-

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AEROSOL CODE DATING EQUIPMENT
that has *earned* industry acceptance

POWER DRIVEN CODER

With work table area.

For automatic code dating of concave bottoms of aerosol cans.

Will mark top, bottom, or both at the same time.

Something new has been added . . .

CASE CODE DATER

with Kiwi built-in rubber band type.

- No loose type to become lost
- Ink just once per shift
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Also . . .

case printers for consecutive numbering or printing information on cases

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gelman of the University of California School of Pharmacy declared. He pointed out that the dielectric constant and the hydrogen bonding properties of the solvent have a profound effect on the polarizibility of the sunscreen.

He described an investigation undertaken to clarify these effects by studying several of the molecules typical of the chemical types used as sunscreens. Ultraviolet absorption spectra were recorded in ethanol, water, isopropyl palmitate and liquid petrolatum in the presence of humectants and surfactants. It was found that the spectra of several of the para-amino benzoate types are particularly affected by solvent environment. Other classes of sunscreens were significantly modified in the absorption properties.

Also on the program was a brief discussion by Dr. G. Robert Clark, director of the Cosmetics Division of the FDA, on "Cosmetics and the FDA." He outlined the work of his division, the laboratory equipment available and the personnel who do the job of studying cosmetic formulations. ★

FEA Meeting

(*From Page* 36B)

in the next few issues of *Aerosol Age*.

Final item on the FEA program was a presentation by E. Hof, Hoechst's sales manager for "Frigen" propellants, of his company's film, "The Customer Wants to Know Exactly." The 20-minute film is designed to help the retailer explain the function of the aerosol principle to his customers.

On the afternoon of that day both the IAA and the IGA held their respective annual meetings, with most of the principal officers reelected for another year. One new election was that of Richard Waldherr, Jr., of Johann Waldherr, Mannheim, to the IGA Technical Committee.

With the reports of the various technical committees, the third International Aerosol Congress came to a close. It was decided that work will be undertaken, with the help of the CSMA, to get out necessary questionnaire forms with a view toward publishing statistical data on European aerosol production.

At the Congress there was talk about holding the next such meeting in London in the fall of 1961, in conjunction with the London Packaging Exposition. However, no definite plans were made because of the reaction of some of the exhibitors from Interpack. It was pointed out that the Congress, when held just after or in conjunction with a Packaging Show, makes difficult the task of the aerosol exhibitors who must participate in both.★

Schering Diloderm

(*From Page* 29)

ing shipments and immediately reports sub-standard materials to Union.

An unusual number of problems were encountered in the manufacture of the valves and plastic cases, as well as in the early stages of production and filling. However, such obstacles are to be expected in the development of new and quite complex components and procedures.

Several plant visits were necessary to bring together representatives of Schering production, development and quality control personnel with suppliers to assess and resolve immediate problems. Each problem, each change in specifications, each compromise had to be carefully evaluated on the basis of both immediate and long-range effect involving the entire program. Almost every decision required a meeting of from two to ten persons. Playing the role of negotiator, Purchasing effected harmony of effort and at the same time held to the original price line.

The filling of "Diloderm Foam Aerosol" into a metered valve container presented a number of knotty

PRODUCTS
THAT WORK BEST
DEPEND
ON ACTION
Manufacturers with the out-in-front products specify ACTION PLASTICS dip tubing more than any other brand. The reason is obvious to anyone who has experienced our consistently reliable performance.
We make more than 150 different tube types ... in varying diameters, wall thicknesses or formulations.
Write for free samples and recommendations.
DIP TUBING FOR
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ACTION PLASTICS, INC.
50 CALIFORNIA AVE.
PATERSON 3, N. J.
Subsidiary of Colorite Plastics of New Jersey, Inc.

problems which had to be solved before a marketable package could be produced.

To begin with, the product is one of the *first foam aerosol packages to be marketed using a metering valve.* The product is in an aqueous vehicle, and consequently filling the individual containers and adding the propellant (Freon 12-114 at 35/65%) must be done at room temperature, since chilling in order to add the propellant as a liquid will freeze the product. Therefore the foam containing the active ingredient is inserted into the container at room temperature, the metering valve is applied (sealed) to the container and the propellant is forced as a gas into the container through the meter valve.

In the Diloderm product the active ingredient is in the form of a solid suspended in a foam. Since the lag time between manufacturing in Union, N. J., and filling in West Roxbury is at least four days, provision had to be made for gentle but adequate agitation and continuous assay during the entire filling operation to insure product uniformity.

Charging the propellant as a gas through the metering valve presented another challenge, which was ultimately resolved by using air pressure at 700 lbs. p.s.i.g. to actuate a metering pump. This pump forces a measured amount of propellant into the sealed container through a labyrinth of three orifices in the valve.

After the unit is filled, sealed and "gassed," it is submerged in a water bath at 120° F. for five minutes to cull out leakers. Then, while still warm, the acceptable vials are shaken on a mechanical vibrator to emulsify the foam with the propellant, thereby enhancing the uniformity of the container contents. Finally each filled tested unit is fitted with a valve actuator, put into a plastic case and returned to the Schering plant for labeling and cartoning as the final sales package.

The entire process, both at Schering and at the plant of the filler subcontractor, is under the supervision of Schering technical personnel. Throughout the operation, process control charts are maintained for in-process assays, foam fill, propellant fill, leak tests and packaging.

Product Application

A uniquely specific derma-steroid for relief of a variety of skin disorders, Diloderm is designed to offer improved anti-allergic and anti-inflammatory activity. Applied topically, it is safe and free from the hazards of systemic absorption, because this new corticosteroid has no systemic effect even when fairly large quantities are used. In extensive Schering animal tests, systemic effect did not appear when 300 times the equivalent amount of Diloderm from one foam delivery was administered intravenously; nor did it appear when 800 times the equivalent of one foam delivery was taken orally.

Distinctive advantages claimed for the medication include a rapid onset

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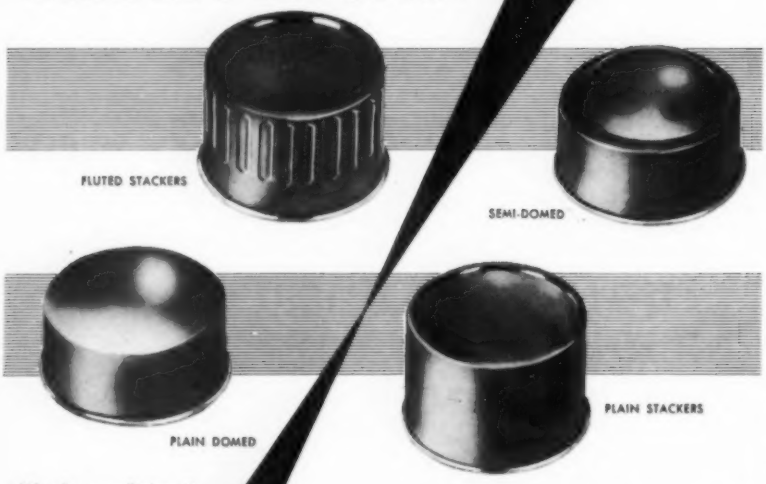
AEROSOL INDUSTRY



We also manufacture tin plate Screw Caps from 18mm to 120mm.

PENN, known for finest service to the bottling industry for over 25 years, is now making tops for aerosol containers.

All of Penn's customers receive superior service and careful attention on every order. You are assured of top quality workmanship, the right price and immediate delivery.

Call or write for information.

Penn CORK & CLOSURES, INC.
1155 MANHATTAN AVE., BROOKLYN 22, N. Y.
EVergreen 9-4416

of action, prolonged effectiveness, prompt remission of symptoms, ease and neatness of application, cosmetic acceptance, economy, dosage versatility and improved base formulation. Of particular note is the fact that the average patient will pay an average of 3½ cents or less per application of the foam aerosol.

A 10 gm. dispenser of "Diloderm Foam Aerosol" provides approximately 100 therapeutically effective applications, each sufficient to cover an area the size of the palm. To apply, the user must: shake the container, invert the dispenser, hold thumb on base of container, grasp applicator between index and middle fingers, rest applicator tip lightly on skin, depress collar and maintain pressure until flow ceases. The ingredients are then massaged lightly into the affected area.

For uncomplicated dermatoses, the product is available in foam aerosol, aerosol spray, and cream forms. For conditions where infection is present, "Neo-Diloderm" (containing neomycin) is offered by Schering in each of the three product forms. The product is available only on prescription. ★

Drug Applications

(*From Page* 30)

purposes claimed in its labeling, and generally the significant, potent new drugs cleared through the new drug procedure have been shown to be efficacious as well as safe. The required demonstration of efficacy rests on two basic concepts. First, in the case of a drug offered as a treatment of a serious, life-threatening condition, FDA will not conclude that its safety has been shown until its efficacy has been demonstrated; this is particularly true when other reliable treatments are known. Secondly, there are very few drugs which are not capable of producing some harmful effects. In such cases, FDA will not conclude that the drug is safe until there is adequate evidence to show that its usefulness outweighs its hazards. When the evidence establishes that the potential hazards of the drug are extremely small in comparison to the number of lives saved or prolonged in serious diseases, the drug is regarded as safe. Penicillin is an example of such a drug.

Let us emphasize again that FDA, in the processing of applications for new drugs, employs the concept of safety as broadly as possible to insure the efficacy of new drugs. It is only in cases involving essentially innocuous drugs employed in minor, self-limiting or otherwise untreatable conditions that the new drug provisions of the act cannot be employed successfully to refuse an application for a drug that has not been shown to be efficacious. In such cases, FDA seeks to discourage unsupported claims by persuasion. When persuasion fails, the application may be made effective but regulatory action may be initiated on misbranding charges, with FDA assuming the burden of proof that the claims made for the drug are false or misleading.

One conclusion that may be drawn from this discussion of the efficacy of new drugs is that it may well be futile to submit a new drug application for an aerosol or other drug preparation that is worthless or for which there is no evidence of usefulness.

Editor's note: This is the first of a two-part discussion. Part II will appear in July.

Interpack 1960

(*From Page* 36*D*)

and seal the carton. In 20 minutes the machine can be reset to take another size can, no leaflets, and a larger carton.

Impressive were new PVC tubes for cosmetics, with round shoulders for top or bottom filling. Also introduced were flat PVC tubes for waxes, lubricating greases, and motor oil. A new-type screw cap filling plug, which is automatically set after the filling operation, permits these tubes

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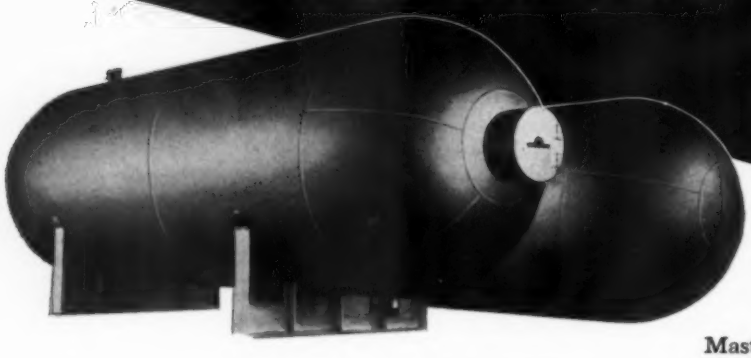

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to be filled tight and also, if necessary, to be air evacuated first.

Aerosols were very well represented. Farbwerke Hoechst had a large stand and a special room for showing their new film which is aimed at assisting retailers in their aerosol sales. Schmalbach, the can manufacturer, showed the years of development of both cans and valves and for the first time exhibited a new drawn-steel two-piece can of the Crown type. In the loading equipment field, Aeratom showed its standard aerosol production units, included the "Aeratom 810" which fills product and propellant underneath the valve before the clinch. Druk-Pak/Waldherr showed the first fully-automatic pressure filling line in Europe. It is compressed-air operated (and thus safe for all types of propellants). The line was in operation at the Fair filling a hair fixative into six-ounce cans charging 100 grams of propellant at speeds of from 30 to 32 units per minute. This company also showed single production units, also compressed-air operated, for semi-automatic operation.

All told, Druk-Pak/Waldherr filled some 10,000 cans of hair spray, with the idea of giving the people at the Fair an idea of the mechanics and safety of aerosol loading. The hair fixative was from Firma Karl Hoppner of Dusseldorf, one of Germany's largest independents, and was filled into six-ounce tinplate cans made by Braunschweiger Belchwaren Fabrik. Precision valves and Hoechst "Frigen" propellant was used. Demand for the unlabeled sample cans proved so great that after the first four or five hours samples were given only to women.

In the valve field, three firms were represented, all of them American in origin. Prazisionsventil GmbH, Frankfurt (German affiliate of Precision Valve International, Zurich), Solfrene S.p.A., Milan (Risdon's Italian licensee), and Seaquist (represented by Glimpex A/S of Oslo) were all exhibitors. Nels Seaquist, president of the American company, was at the Fair. Two of the valves, Precision and Risdon, are made in Europe, while the Seaquist valve is currently being imported.

Being essentially an exhibition of machinery, the chemical companies (except for Farbwerke Hoechst, which has the leading position in the European aerosol propellant field) were conspicuous in their absence. Adaptable labeling machines, packing tables, conveyor belts, etc., all usable by the aerosol loader, were much in evidence. In fact it would be a fair evaluation to say that aerosol packaging seems to have finally triumphed over European suspicions about this type of packaging, and that the aerosol exhibits coupled with the Aerosol Congress (attended by 260) was the high point of the Fair.

Though the next Interpack is scheduled for 1962, there is some talk about putting it off for an additional year. But this latter belief seems to have been overcome by the realization that the packaging field is moving so fast that some of the machinery shown this year may be already outmoded by other units still on the drawing boards. German exhibitors, seemingly very satisfied with their sales at the Fair, appeared to be firmly convinced that the show should be held more frequently, perhaps even every year as the U.S. Packaging Show is held.

Many seemed a trifle disappointed that there weren't more U.S. visitors at Interpack, particularly in view of the growing interest by U.S. packagers and marketers in the European retail market. Despite this interest, we fear U.S. businessmen do not really understand export business and we predict, unless they learn quickly, they will continue to lose their share of the overseas market.★

•

Betts Enters Aerosol Field

Betts & Co., Ltd., London capsule maker, will enter the aerosol field this summer. At the conclusion of a business tour of the U. S., Canada, Cuba and Jamaica, W. S. H. Betts, the company's sales manager, announced recently that the company has begun making 2¼-ounce aluminum containers for Yardley's hair spray.

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Aerosols in Review

(*From Page* 48)

however, says it did not find a plant economical until the 13-million-per-year mark had been passed.

"Other factors which contribute to captive filling include prestige, stricter product control and tighter security on formulations.

"Stanley Home Products reports that its first aerosol line coincided with installation of other automatic equipment in its factory. Additional reasons for manufacture were 'substantial savings in many instances' and ability to 'manufacture to our own formulations and specifications.'

"Marketers who have launched into a filling venture do not advertise the problems they've encountered. But every captive filler must contend with hiring a technically qualified staff; buying valves, cans, propellant, etc., and acquiring the equipment and the space to store them; issuing product guarantees; shipping and warehousing. In short, 'know-how' must be learned, and the marketer must assume all the worries he once left to the filler.

"Rarely does a captive filler break completely with his custom loader, whom he still relies on for part of production 'know-how' and product development. Johnson says it will continue to depend on contract fillers for a substantial share of its loading and that, even when the new plant is running at full capacity, it will be able to fill only a part of Johnson's needs. Another marketer-filler believes the custom filler can develop formulations faster than the companies themselves, because he is able to concentrate on a particular product while the marketer is concerned with developing a diversified line."

The article points out that marketers' have been encouraged to install their own filling equipment by equipment manufacturers. It reports on a recent letter by a major equipment manufacturer calling attention to the "high packaging costs" of the custom filler and urging that aerosol line installation is the surest way of avoiding such costs. *Chemweek* reports that a sharply worded rebuke on these contentions has been made by a Los Angeles filler.

"According to the custom fillers surveyed by *Chemical Week*, captive filling has had little effect on their business. "Sentiment runs from complete lack of concern to a feeling that 'other fillers will be hurt but not me.' Some admit privately though that the fillers as a whole have suffered from the withdrawal of what is often the cream of their business.

"If captive filling has hurt anyone yet, it has been the filler who depends on a single company for a large portion of his income, and the larger fillers whose customers are usually the very big marketers most likely to install captive lines. Of course, new marketers are continually entering the field. The filler can usually make up a big loss by taking on several of these smaller marketers, but he still loses money in the process. Price cutting does not seem to be a way to prevent captive filling. Major marketers with high volume are already enjoying the filler's bottom price."

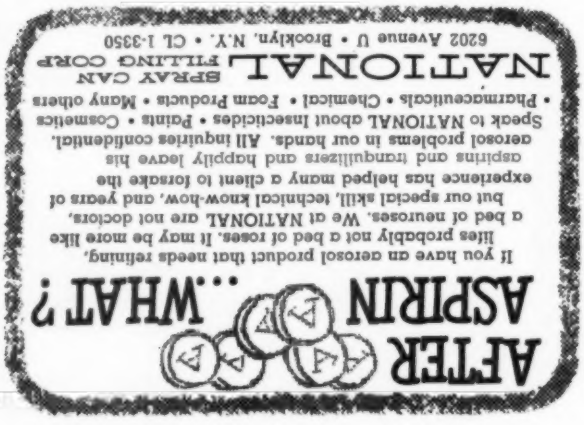
The article concludes that mergers are a likely possibility to further concentrate the contract filling business. "It seems likely that eventually custom fillers will have to occupy a different position. Instead of acting as large-run fillers, they will place more concentration on research and development of new products. Filling operations will largely consist of shorter runs for smaller marketers, overflow for big marketers, and new products in test market. More diversification is coming, too (e. g., a toiletries filler branching into paints)".

•

A PROPOSAL for a Canada-U.S. "common market" is made by John T. Connor, president of Merck & Co., in the May issue of *Chemical Processing*. Pointing to the decline in U. S. exports in the past 18 months, which he says may be hit even harder by formation of new trade blocs in Europe, Mr. Connor said Canada is the only other country of the first rank in world trade experiencing the same difficulty.

Incursions by foreign products in the pharmaceutical and chemical fields, he said, were making themselves felt so much because of higher labor and overhead costs in the U. S. and Canada.

"Foreign manufacturers apparently can import over the U. S. tariffs and still undersell domestic products. Canadian manufacturers suffer in a similar way. To be protected from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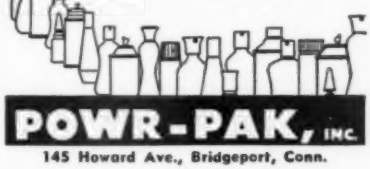

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lower labor-cost competition from abroad, a Canadian company must first build a plant and show that the content of the product produced is over 25% Canadian. Then, with no protection from dumped imports, the company must capture at least 10% of the Canadian market.

". . . If we go our separate ways, which at least has the appeal of simplicity, we shall doubtless lose many of our foreign markets, most of the goodwill earned during and after two world wars, and all or most of the benefits from $50 or $60 billion worth of foreign aid."

Mr. Connor strongly advises that the chemical industries of both countries get together a joint study group to evaluate duties between the U. S. and Canada. "Specifically, the group could try to determine what tariffs affecting chemicals could be lowered or eliminated, with advantage to both countries. It could also look at the various classifications of chemicals in both countries to see if more uniformity is possible. At the same time a realistic look might be taken at the tariffs applied to chemical and pharmaceutical products imported into the two nations to the detriment of domestic producers."

Mr. Connor's article ignores the close ties of Canada and Britain (by way of the Commonwealth of Nations) and the fact that Britain and other Commonwealth members comprise a major market of Canadian-produced chemicals and pharmaceuticals.★

Sterile Filling Line

(*From Page* 25)

using a coil and dry ice (in place of a refrigeration unit) is used. Air circulation in the chamber is kept to a minimum, and as a matter of fact, a partial vacuum is maintained. Removable, sterilizable polyerethane foam wrap is used for insulation around the filling and gassing unit.

Mr. Stearns explained that the filling of the product is done through an Accufil unit at 23 per minute. Accu-

racies of plus or minus 1% are achieved for the ingredient and for plus or minus 10% for the propellant. Valve placing is manual, and the crimping is done by a hand operation. Last step in the chamber is the final check weigh, before the units pass out of the chamber and go into a water bath. Hot alcohol is used to rinse the products as they emerge, not only to further sterilize the outside of the containers but to remove any oil residue from spill-over of the product inside the filling room.

The Marketer's Role

(*From Page* 24)

"We do not advertise in magazines, newspapers or radio or television, but advertise in medical journals and to doctors either by direct mailings or personal contact by our representatives. Clinical investigations are reported as publications in medical journals. For prescription items, we cannot use lithographed containers, but must have paper labels with directions to the customer attached, so that the pharmacist can easily remove the label copy and affix the prescription label."

Mr. Graham described in detail his company's efforts to select just the right container for "Meti-Derm," explaining how the company directed its efforts toward the avoidance of self prescription by the patient with left-over product. For this product, he reported, his company experienced dip tube growth, in which the container (especially the smaller type) was made inoperative by extension of the dip tubing. "In our original development work, the valve supplier recommended the length of tubing required, and on a Saturday morning we filled approximately 3,000 units. The following Monday, approximately 75% would not spray. With the aid of the valve supplier and our own Pharmacology Department, we took X-ray pictures of the dip tubes in the finished containers and determined that two inches of polyethylene dip tube will grow about one-eighth of an inch in the presence of propellant 11. It was then an easy matter to establish specifications. We would have saved quite a bit of time if the suppliers had made us aware of this growth problem."

"The Food and Drug Administration must be furnished with the results of the testing of clinical material by specialists in this field throughout the country. We must record both effectiveness and any side effects reported by independent doctors. We must express in terms of percentage of material sprayed per two or three seconds of valve activation and, in the case of metered valves, the exact amount of material delivered on each application. This cannot vary by more than plus or minus 10%.★

The Filler's Role

(*From Page* 24)

filler, he said, will make sure incoming ingredients are carefully policed so that the concentrate will meet the customer's specifications. In the latter function, he said, the customer is often essential, and he is welcomed into the filler's plant to check on quality and performance of finished product.

"In the pharmaceutical field, test runs are highly important, because they are required to provide the necessary units for clinical testing. The custom filler is the wise choice to produce these, since he has the facilities to turn these out best at the least cost.

"For the custom filler, the laboratory is one of the biggest items of overhead. But the filler well appreciates the value of his laboratory to the pharmaceutical marketer, and welcomes the marketer's personnel for product development and quality control."

In conclusion, Mr. Mason called the custom filler a "ready-made testing ground for the marketer," which, he said, is available without the marketer having to buy or revamp his own equipment to undertake the considerable problems associated with aerosol filling. ★

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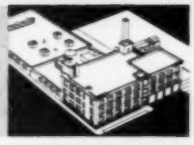

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Intravenous Drugs

(*From Page* 23)

many other factors, including the physical properties of the drug, the distribution of the hair follicles and surface pores (through which the material is chiefly absorbed), and the properties of the vehicle are involved in delaying the process.

"The use of the rectal or oral route of administration also depends upon the amount of drug absorbed, in this case, by mucosal surfaces. The physical skin barrier is absent, and the material is in closer contact with the circulatory system. However, the drug must be capable of withstanding the digestive onslaught of the stomach and intestines. Furthermore, absorption must take place in the presence of peristaltic movement and usually in spite of an adverse concentration gradient.

"Administering a drug by the injection technique overcomes many of the objectionable facets of oral and topical dosage, while introducing other objections. The most decided disadvantage is the fact that sterile technique, equipment and materials are necessary, and the injection must be made by a specially trained person, usually not the patient.

"In the case of intravenous administration, even a nurse or doctor sometimes encounters difficulty. And in addition, most injections are accompanied by some degrees of discomfort. There is the possibility, too, especially in the case of intramuscular or subcutaneous injection, that the material will be completely absorbed and that a sterile abcess will result."

Dr. Sciarra then discussed in detail the respiratory tract, pointing out that its mechanism for removing particles from the air is so efficient that the majority of particles larger than 5 microns in diameter is usually prevented from entering the lungs. "On the other hand, the smallest respiratory unit, the alveolar duct, has a diameter of about 200 microns. There is, of course, a minimum to the size particle which will be retained within the alveolar sac. Thus those particles which tend to remain suspended within the alveolar air would be expelled during expiration, and this size particle is usually below 0.5 micron. Particles between these limits (0.5-5.0 microns) would tend to fall against the alveolar walls and mix with the alveolar fluid.

"A factor which contributes greatly to the respiratory function of the lung is the thickness of its walls. From the respiratory bronchiole to the alveolar sac, these walls consist of thin connective tissue in close contact with underlying blood vessels. In fact, the walls of the pulmonary alveoli consist of a single layer of epithelial cells with a single capillary between adjacent alveoli, so that, in most instances, material in the alveolar cavity is separated from circulating blood by only two membranes, the alveolar and the capillary walls. The area of the exchange surface of the lung must also be considered. This is estimated to be about 55 square meters, or about 25 times the surface area of the skin. If it is kept in mind that this is also the area of the available adjacent blood supply, the rapidity of absorption in this area will be more readily understood."

Dr. Sciarra declared that to be applicable for aerosol inhalation therapy the drug *must be* soluble in natural secretions, since if it were to be very slowly soluble it would tend to act as a foreign body and produce some degree of irritation.

"If it is determined that a material may be used by inhalation into the lungs, then the next step is to obtain an aerosol of optimum particle size. As was stated previously, this optimum range is between 5 and 0.5 microns. And, since dosage is usually of primary concern, then it is absolutely necessary to obtain 100% of the particles within this size range. Larger particles would deposit on mucosal surfaces and be slowly absorbed, while smaller particles would be expelled. The former would defeat the purpose of inhalation therapy,

whereas the latter would result in inadequate dosage.

Other factors enter into the consideration, Dr. Sciarra pointed out. The fact that the respiratory system functions as a humidifying mechanism (which would tend to increase the size of the particles) and that the absorption of materials in the lung depends upon the efficiency of the absorption surface were both cited as prime examples of this. He briefly outlined how some of the various materials may be formulated with solvents to produce the desired particle sizes. ★

Pharmaceutical Market

(*From Page* 22)

educating the doctors and the pharmacists. If these influential people cannot reassure the potential customer that aerosol drugs and pharmaceuticals have *something extra* to offer, the people will soon lose confidence in the promotional efforts of the marketers."

Turning to specifics, Mr. Holloway cited the following 12 advantages as points to be stressed in future promotional efforts:

1. The aerosol's contents remain uncontaminated during the life of the package.
2. There is no danger of contamination while applying.
3. It avoids chances of spreading the infection in application.
4. It avoids pain sometimes associated with conventional application.
5. Provides more uniform coverage with less waste of product.
6. It is faster and easier to use.
7. There is little danger of accidental poisoning (to children, for instance) in the aerosol package.
8. It has the ability to deliver a metered dose.
9. It may deliver powder into normally inaccessible places.
10. It provides a more uniform particle size than do other methods of application.
11. It produces small enough particles to be absorbed systematically and can be used for drugs normally applied by injection.
12. The cost is generally low when compared with the price of the product—so low, in fact, that packaging and component costs will be warranted by the increase in the product's efficiency and appeal.

Mr. Holloway next discussed specific product types. The burn remedy, he said, is one product which already has demonstrated its consumer acceptance by recording an estimated annual sales figure (for aerosol products) of $10.5 million annually. But as "relatively untouched" categories he suggested: dermatitis remedies (acne care, poison ivy, athlete's foot remedies), topical applications for cuts and abrasions, external analgesics, eye washes and lotions, ear medications, operating room aids (for incisions prior to and after suturing, clear plastic sprays in place of sutures), sprays to prevent bed sores and other hospital maladies, vaginal medications, respiratory sprays (asthma products and nasal sprays), systemics (insulin, aspirin, seasick preparations, ulcer type medications), cough syrups and elixirs, vitamins, and air sanitizers for hospital and sickroom use.

In every one of these categories, he suggested, the aerosol product could conceivably capture a major share through its obvious advantages. Mr. Holloway pointed out that new aerosol research carried out in medical schools and universities could result in aerosol treatments for pleurisy, tuberculosis and pneumonia.

He said that one major weakness of the aerosol industry at present is its "lack of depth" in pharmaceutical and medical research. "There is no more than a passing reference to aerosols in medical schools in this country, and of the total of 76 pharmacy colleges in the U. S. only four have aerosol courses." He suggested that the industry work hard to overcome these deficiencies to better prepare the medical and pharmaceutical professions for acceptance of the aerosol idea in a far wider range of applications. ★

MIDWEST

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Liquified Petroleum Gas
Filling & Packaging Facilities
Specializing in Butanes and Pentanes
Prepo Fuel for original equipment manufacturers or under private label.
Originator of L. P. G. in disposable containers.
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GARD now offers the most complete, most modern filling facilities in the industry for all aerosols from food to paint. Minimum production runs—as low as 1,000 cans to 1,000,000 and up! Air-conditioned, humidity controlled throughout.
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Riverside 8-9623
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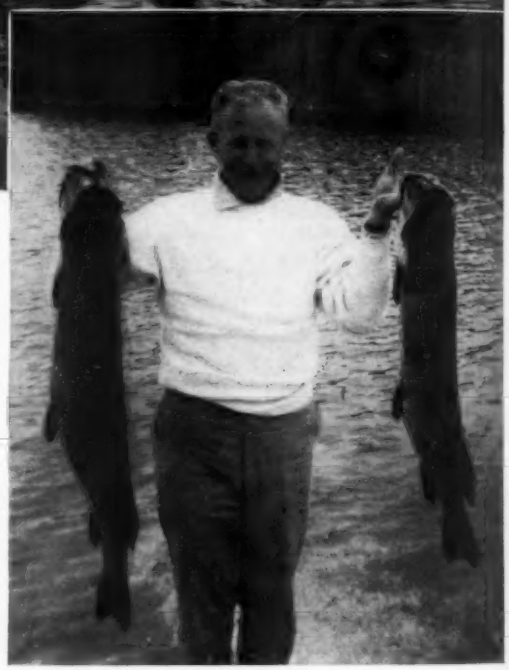

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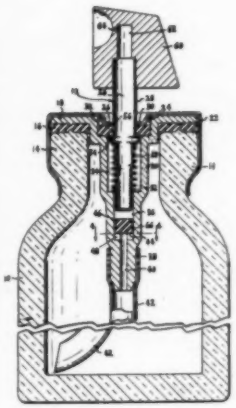
New Aerosol Patents

Listed below is a brief review of recent patents pertinent to the aerosol and related industries.

Complete copies of these patents may be obtained by writing to the Commissioner of Patents, U. S. Patent Office, Washington 25, D. C., and remitting 25 cents for each copy desired.

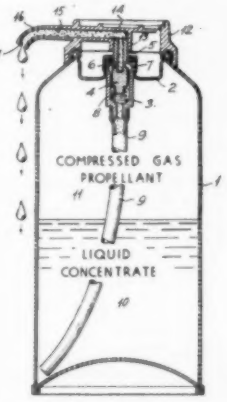
2,932,432. METERING TYPE AEROSOL SPRAY DISPENSER. Issued April 12 to Walter C. Beard, Jr., Naugatuck, Conn., assignor to The Risdon Manufacturing Co., Naugatuck.



A dispensing valve for releasing measured amounts of pressurized fluid from a storage container upon each actuation of the valve, comprising a valve housing having a fluid inlet and a fluid outlet at respectively opposite ends and a metering chamber intermediate said ends, an annular sealing sleeve carried by said housing at its outlet end and a reciprocable plunger passing through said sleeve forming a sliding seal therewith, said plunger extending into said chamber in peripherally spaced relation to the side walls thereof, spring means engaging said plunger and urging it normally outwardly of said chamber, said plunger having a peripheral enlargement intermediate its longitudinal extent engaging with the inner margin of said annular sleeve within said chamber in the outer position of said plunger, a fluid passage in said plunger open to atmosphere at its outer end and a restrictive discharge port in the side of said plunger and communicating with said passage above said enlargement, said discharge port being normally disposed outside said metering chamber but moved thereinto when said plunger is depressed, said valve housing having a valve support at its inlet end and a side wall forming a substantially cylindrical valve seat above said support within said chamber, said valve support being spaced from the inner end of said plunger when the latter is in its normal outer position a distance greater than the axial distance said plunger must be depressed to bring said plunger port into communication with said metering chamber, and a resilient compressible plug member disposed within said chamber between said support and the inner end of said plunger, said plug member being slightly smaller in diameter than the diameter of said cylindrical valve seat but expansible laterally by compression between said plunger and support to seal peripherally against said cylindrical valve seat upon depression of said plunger, said plug having a normal axial length not exceeding the distance from the inner end of said plunger to said support but sufficiently great such that any axial play between the plunger and the plug, in the normal outer position of said plunger, is less than the distance said plunger must be depressed to bring its discharge port into communication with said metering chamber.

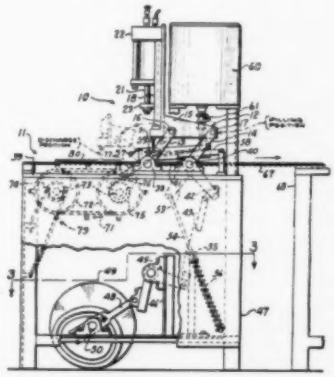
•

2,932,434. MEANS FOR DISPENSING LIQUID CONCENTRATE DROP BY DROP. Issued April 12 to Robert H. Abplanalp, Bronxville, N. Y., assignor of one-half to John J. Baessler, Bronxville.



A drop dispensing package comprising: a normally sealed container partially filled with a free-flowing active ingredient; a valved discharge passage leading from the interior to the exterior of the container and having an outer and of enlarged cross sectional area; and in the head space of said container a propellant under constant pressure sufficiently great to dispense, in the absence of a drop producing constriction in said passage, an uninterrupted flow of active ingredient from the discharge passage when the valve is substantially fully open; said passage having therein a constricted portion to restrict the flow of the active ingredient to the enlarged outer end of the discharge passage sufficiently to permit successive portions of said flow to accumulate in the enlarged outer end of the discharge passage and dispense the active ingredient therefrom in the form of successive drops when the valve is substantially fully open.

2,932,330. MACHINE FOR FILLING CONTAINERS WITH MEASURED CHARGES. Issued April 12 to Alfonso M. Donofrio, Toledo, assignor, by direct and mesne assignments to The Multi-Fill Machine Co., Toledo.



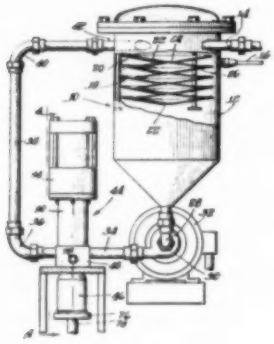
A material measuring mechanism for a machine for filling open topped containers with measured charges of liquid material in which the containers are serially moved in groups of uniform number from parallel files to a filling station, said mechanism comprising a similarly numbered group of individual container filling devices mounted on a reciprocating carriage in a row and spaced according to the spacing of a group of said containers at said filling station, a closed bottom, open topped, liquid, supply pan, mechanism for reciprocating said carriage and group of devices mounted thereon to a first position over said supply pan in which said position said devices are inserted into said pan and immersed in the liquid therein and a second position in which said carriage is reciprocated with filled devices and said devices are positioned over said respective containers at a container filling station, and drive mechanism for actuating said filling devices when in said first position for drawing charges of liquid from said pan and discharging said charges into said containers when in said second position, said drive mechanism including means for moving the containers to be filled to said filling station operating in synchronism with the said actuating mechanism for the filing devices.

•

2,931,150. APPARATUS FOR PACKAGING A LIQUID UNDER PRESSURE. Issued April 5 to James F. Ryan, Jr., Castro Valley, Calif., assignor to W. F. and John Barnes Co., Rockford, Ill.

An apparatus for packaging a liquid product comprising chamber means, means for supplying a liquid product to said chamber means, means for supplying a gas under a predetermined superatmospheric pressure to said chamber,

baffle means within said chamber for spreading the liquid product to expose the liquid product to the gas and promote

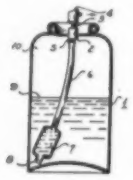


even distribution of the gas throughout the liquid product, and means for subsequently filling a container with said liquid product having gas distributed therethrough and for sealing the container while constantly maintaining the liquid product and gas under a pressure at least substantially as great as said predetermined pressure.

•

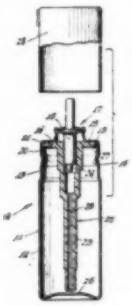
2,932,433. DISPENSER FOR PRESSURE PACKED MATERIALS. Issued April 12 to Robert H. Abplanalp, Bronxville, N. Y., assignor of one-half to John J. Baessler, Bronxville, N. Y.

In a dispenser for pressure packed material comprising: a container charged with an active ingredient and a propellant and having a valve housing provided with a valve and a single dip tube depending from the valve housing to the bottom of the container: the improvement for dispensing a single use quantity of the active ingredient when the container is either upright or inverted which consists in making a portion of the length of the dip tube closely adjacent the free end of the dip tube of much greater internal cross sectional area than the remainder of the bore of said dip tube to form within said tube a reservoir having free and



unencumbered communication with the remainder of the bore of the tube and adapted to contain a greater quantity of the active ingredient than said dip tube could contain if the smaller portion of its bore were uniform throughout the entire length of said tube, said reservoir having at its bottom a constricted feed inlet at all times open and in free communication with the interior of the container to permit the free flow of active ingredient through said inlet in so said reservoir.

2,931,540. RECEPTACLE FOR CONTAINING AND DISPENSING A SUBSTANCE UNDER PRESSURE. Issued April 5 to Philip Meshberg, Fairfield, Conn.



An improved receptacle for containing and dispensing a substance under pressure comprising a one piece steel container having an annular wall portion provided with an inturned edge adjacent an open end thereof forming a short slightly upturned annular flange, said annular wall being formed with an annular groove adjacent said open end, a valve unit having a valve means and a laterally extending mounting portion to fit over the open end of the container to form a closure therefor, said laterally extending mounting portion being formed with a depending flange to fit over the annular wall of said container, a resilient sealing means disposed between said valve unit and container to form a seal therebetween, the portion of the depending flange remote from said laterally extending portion being bent into said annular groove to secure said valve unit in sealing relation with respect to said container and a dip tube operably associated with said valve unit and disposed in said container for directing said substance from the container to the valve unit.

•

Calls Paint Future Big

Within three years, spray paint will outsell all other non-food aerosol products on the market, according to a prediction made last month by Elias Shapiro, executive vice president, Plasti-Kote, Inc., Cleveland manufacturer of aerosol spray paints.

According to Mr. Shapiro, aerosol paints have grown tremendously in the past three years, and he estimated that within another three years aerosol push-button spray paints *will lead* non-food aerosol products. "By 1963, hundreds of millions of cans will be sold every year," said Mr. Shapiro.

The aerosol paint firm also announced that its sales were up 40% for the first quarter of 1960.

Trade Mark Applications

Applications for registration of the following trademarks were published in recent issues of the *Official Gazette* of the U. S. Patent Office. In not all cases are there strictly aerosol trademarks, however, many of the products listed below come within the category of those for which a possible future use in aerosols is foreseen.

DOOM, for aerosol insecticide. Filed May 25, 1959 by Howard A. Chittick, d.b.a. Fairfax Biological Laboratory, Clinton Corners, N. Y., listing first use on or about Aug. 1, 1954.

SURE-MINT, for household disinfectant and deodorant. Filed Nov. 5, 1958 by Joseph F. Uddo, d.b.a. F. Uddo & Sons Co., New Orleans, reporting first use in May of same year.

SULFASOL, for veterinary preparation for the control of wound infection. Filed Nov. 27 by American Home Products Corp., New York, assignee of Fort Dodge Laboratories, Inc., Fort Dodge, Iowa, claiming first use May 22, 1942.

WILGLEAM, for glass cleaner. Filed Nov. 10 by Wilson Products Co., Inc., Cincinnati, listing first use Oct. 28.

DIARASOL, for general purpose coating material for use in the formulation of protective and decorative coatings. Filed Nov. 19 by Diamond Alkali Co., Cleveland, reporting first use Oct. 29.

ESPECIALLY FOR YOU, for perfume. Filed June 5, 1959 by Hangsterfer's Laboratories, Inc., West Deptford Township, Gloucester County, N. J., giving first use March 21, 1949.

ALVEOL, for pharmaceutical product for thinning mucus in the respiratory tract of humans and animals. Filed Nov. 18 by The Denver Chemical Manufacturing Co., d.b.a. Wampole Laboratories, Stamford, Conn., claiming first use Oct. 22.

SPRIG-O-MIST, for mouth refresher. Filed Sept. 24 by United States Pharmacal Co., Brooklyn, N. Y., reporting first use Aug. 25.

SCALPEX, for germicide for disinfecting and sterilizing barber's and beautician's tools. Filed Sept. 30 by Columbus, giving first use Aug. 7.

FELICITY and FELICITIF, both for perfumes and eau de cologne. Filed Nov. 9 by Maison de Wyndham, Atlanta, claiming first use (for first) on Nov. 5 and (second) on Nov. 2.

ELYSEES 64-83, for perfume, toilet water, and bath oil. Filed Oct. 15 by Pierre Balmain, Paris, reporting first use in commerce Aug. 6, 1947.

CLASSIFIED ADVERTISING

Address all classified replies to Box Number c/o *Aerosol Age*, PO Box 31, Caldwell, N. J. Rates for "Help Wanted" advertisements are 20¢ per word; minimum charge $3.00. Rate for individuals seeking employment is 5¢ per word, $1.00 minimum. Advertisements of new machinery, products and services accepted at the rate of $10.00 per column inch. Minimum space, one inch. Copy closing date, 10th of preceding month. *Checks must accompany all orders.*

AEROSOL MARKET IN THE EFTA

Well-known aerosol packer in Switzerland desires contact with U.S. firm considering contract-filling of their products, for sale in the EFTA countries.
Please write to Box 218, c/o Aerosol Age.

EQUIPMENT FOR SALE

FOR SALE:

1 SMALL MOJONNIER AEROSOL COLD FILL UNIT—complete with electrical filler and crimper—can process 5000 small cans a day. Write Box 219, c/o Aerosol Age.

New Insecticide

(*From Page* 44)

find the most aerosol use, Mr. Stoddard advised that butonate has limited knock-down properties, and suggested that it be formulated with pyrethrum and a synergist when knock-down or flushing action is desired.

Mr. Stoddard said that at present only technical butonate is available from the Prentiss Drug & Chemical Co., 101 West 31st Street, New York 1.★

•

ConCan Names 2 Directors

Continental Can Co., New York, last month elected William M. Cameron and Charles B. Stauffacher to its board of directors. Mr. Cameron is executive vice-president of the company's Glass and Plastics Operations Group and was formerly general manager of Continental Overseas Corp. and sales manager and vice-president in charge of ConCan's Central (Metal) Division.

Mr. Stauffacher, executive vice-president in charge of the Robert Gair Paper Products Group, was formerly vice-president in charge of finance.

Perfumers' Meeting

(*From Page* 56)

Mr. van Liew cautioned that it is premature to make the American male aware that he has been accepting his favorite fragrances as "masculine" through the media of package design, product name and subconscious association with the functionality of his cosmetics. By their response to his shaving cream, aftershave lotion and other toiletries, Mr. van Liew said, women exert a strong influence on the preference of men for a specific toiletries product.

PITFALLS in perfumery can be a real danger to product success unless some essential cautions are taken, Dr. Oliver L. Marton of Shulton pointed out. Generally speaking, he said, pitfalls in perfumery are caused by (1) lack of knowledge of (or in) perfumery, (2) human negligence or inaccuracy, or (3) the effect of unknown factors. Going into the matter further, he cautioned against:

1. Varying properties of raw materials.
2. Selection of raw materials by non-perfumers (chemists or purchasing agents).
3. Wrong interpretation of literary references (particularly those having to do with irritation).
4. Distorted test conditions.
5. Wrong interpretation of test results.
6. The nature of the medium.
7. Changes in perfume concentration.

PERFUMERS and patents are virtual strangers, Thomas Cifelli Jr. of Richards and Cifelli told the Perfumers' Symposium. He said that recent wide-scale extension of the perfumers' work into the field of "industrial" products, including aerosols, has brought about a greater risk of patent infringement than was the case when the perfumer was chiefly interested in creations for women. The fact that the perfumer is *more* secretive than technicians and artisans in other fields "does not obviate the fact that the patent can be an invaluable tool in protecting a new development."

Mr. Cifelli suggested that there are three primary areas of patent coverage which should be investigated by the perfumer: (1) new perfume ingredients, (2) new perfume formulations and (3) new perfume containers. The first of these can be almost as valuable to the perfumer as getting a patent on a new material, he pointed out.

WALTER LENGFELDER of Fleuroma, Inc., outlined the abstract concept in perfumery by drawing a parallel between the development of abstract painting and abstract perfumery. With the help of color slides, he showed how the abstract concept of painting has developed since Daguerre and Niepce published the invention of photography; and parallel to this how perfumery has developed since Freidrich Woehler synthesized the first organic chemical.★

'59 Product Survey

(*From Page* 41)

this year revised the price upward with a view toward higher-priced colognes, pharmaceuticals, and coatings (and the trend toward larger containers for other Products) and arrived at a more nearly accurate total of $750 million.

Further commenting on the accu-

racy of the survey and the projection necessary, Mr. Husted commented "It is significant that the valve and container figures agreed within 3% of each other and the reported production by aerosol fillers was 87% of the adjusted total. Also, the adjusted figure varies only a few per cent from the container and valve figures.

"In the opinion of your committee, the difference between the fillers' actual production and the adjusted total can be accounted for chiefly in seven categories. It was felt that each of these categories could be adjusted upward as follows:

	million
Insect spray	15
Coatings	4
Room Deodorants	10
Shave Cream	5
Hair Spray	20
Dental Cream	4
Cologne	5

The Aerosol Product Survey again concluded that a meaningful report of aerosol foods is not yet possible.★

•

Phillips Joins Herzka Firm

P. W. Phillips, until recently with The Metal Box Co., Ltd., last month joined Pressurized Packaging Consultant, Ltd., London, as a laboratory physicist. The British aerosol consulting firm is headed by A. Herzka.

SURVEY OF AEROSOL AND PRESSURIZED PRODUCTS FILLED IN 1958
(NON-FOOD PRODUCTS ONLY)
CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION

Number of units by the sizes indicated for each of the products listed, filled by 95 companies in their own plants in 1958, including government contracts.

	NUMBER OF UNITS FILLED				
	Glass Containers	Metal Containers			
PRODUCT	All Sizes	16-Ounce But Over 12	12-Ounce But Over 6	6-Ounce And Less	Total
INSECT SPRAYS					
1. Space Insecticides	†	3,306,078	17,435,430	1,576,053	22,317,561
2. Residual Insecticides (such as roach and ant sprays, etc., including insect repellents-all types)	-o-	4,026,318	4,947,028	1,227,449	10,200,795
3. Residual Insecticides-Plants (household and gardens)	-o-	3,112,673	1,392,563	381,005	4,886,241
4. Mothproofers (including all fabric pests)	-o-	1,795,352	2,958,053	141,848	4,895,253
COATINGS					
5. Pigmented and Metallic Paints	†	17,342,231	6,910,895	2,961,342	27,214,468
6. Clear Plastic Sprays	†	2,087,652	680,086	141,145	2,908,883
HOUSEHOLD PRODUCTS					
7. Room Deodorants	†	2,330,006	10,649,968	36,800,211	49,780,185
8. Fire Extinguishers	-o-	2,732,995	861,721	†	3,594,716
9. Snow (decorative and all types)	-o-	2,722,542	3,471,689	584,921	6,779,152
10. Glass Cleaners	†	3,326,907	50,656	290,200	3,667,763
11. Shoe or Leather Dressings	†	74,500	2,116,193	3,249,587	5,440,280
12. Other Household Products (cleaners of all types such as metal, oven, rug and upholstery; waxes, water repellents, etc.)	†	849,506	3,358,641	2,187,399	6,395,546
PERSONAL PRODUCTS					
13. Shaving Lather	†	127,838	18,733,625	26,452,153	45,313,616
14. Hair Sprays and Dressings	†	20,561,135	18,994,413	53,038,044	92,593,592
15. Dental Cream	†	-o-	†	12,905,832	12,905,832
16. Medicinals and Pharmaceuticals (such as fungicides, burn treatments, topical antiseptics, oral medicinals, anesthetics, antibiotics, etc.)	969,710	†	528,424	5,631,474	7,129,608
17. Colognes and Perfumes	10,292,524	-o-	-o-	3,270,689	13,563,213
18. Sun Tan Preparations	†	†	†	682,738	682,738
19. Other Personal Products (such as shampoos, personal deodorants, hand lotions, powders, depilatories, sachets, etc.)	†	48,696	1,475,894	5,127,548	6,652,138
MISCELLANEOUS					
20. Veterinarian and Pet Products (such as shampoos, deodorants and insecticides, etc.)	-o-	205,669	1,644,242	1,152,258	3,002,169
21. Miscellaneous Products (such as mildew, automotive (other than reported in categories 5 and 6), industrial lubricants and any others)	†	3,911,616	6,349,513	1,198,618	11,459,747
TOTALS	11,262,234	68,561,714	102,559,034	159,000,514	341,383,496

† Too revealing to be released.

Index to Advertisers ▸▸ May 1960

—A—

Action Plastics, Inc. 69
Aerosol Corp. of the South 76
Aerosol Machinery Corp. ..... May
Aerosol Research Co. 3
Aerosol Techniques, Inc. 76
Alfco, Inc. 19
Allied Chemical Corp., General Chemical Division 31
American Can Co. ..... May
American Cholesterol Products, Inc. 8
Anchor Plastics Co., Inc. 73
Apcon Co. ..... May
Arctic Lodges Ltd. 80
Aromatic Products, Inc. ..... May
Armstrong Laboratories 75
Associated Brands, Inc. 75

—B—

Baltic Chemical Co. 63
Barr, G., & Co. 77
Builder's Sheet Metal Works, Inc. 65

—C—

Chase Products 78
Cleveland Aerosol Pkg. Corp. 79
Consolidated Aerosol Corp. 75
Consolidated Pkg. Mach. Corp. ..... May
Continental Can Co. 35
Continental Filling Corp. 45, 78
Crown Cork & Seal Co. 40

—D—

Dodge & Olcott, Inc. ..... May
Druk-Pak, Inc. 72
du Pont de Nemours Co., E. I. 4

—E—

Emson Research, Inc. 50
Ertel Engineering Corp. ..... May
Eska Chemical Co. 76
Eveready Products, Inc. 77

—F—

Fairfield Chemical Division, Food Mach. & Chem. Corp. 7
Felton Chemical Co. ..... May
Florasynth Laboratories, Inc. ..... May
Fluid Chemical Co. 75
Foresman, Robert A., Jr. ..... May
Walter Frank Organization ..... May
Fritzsche Bros., Inc. 9

—G—

Gard Industries, Inc. 79
General Aniline & Film Corp. ..... May
Gilbert Plastics, Inc. 20
Givaudan-Delawanna, Inc. 49
Gottscho, Adolph, Inc. ..... May

—H, I, J—

IKI Manufacturing Co. 77
Impact Container Corp. 61
Island Equipment Corp. 50
JG Machine Works ..... May

—K, L—

Karl Kiefer Co. ..... May
Kartridg-Pak Co. ..... May
Kaysing Korp. 78
Kiwi Coders Corp. 68
KLM-Royal Dutch Airlines 66

—M—

Magnus, Mabee & Reynard, Inc. 12
Marcy Laboratories, Inc. 77
Master Tank & Welding Co. 72
McLaughlin Gormley King ..... May
Metal Fabrications, Inc. ..... May

—N—

Nalbach, John R. Engineering Co. ..... May
National Spray Can Filling Corp. 74
Newman-Green, Inc. 11
Norda 37

—O, P—

Oil Equipment Laboratories, Inc. ..... May
Old Empire, Inc. 67, 75
Owens-Illinois Glass Co. 43
Pace, Inc. 75
Par Industries, Inc. 71, 76
Peerless Tube Co. 35
S. B. Penick & Co. ..... May
Pennsalt Chemicals Corp. 18
Penn Cork & Closures, Inc. 70
Peterson Filling & Packaging Co. 3rd Cover, 78
Pfizer, Chas., & Co. 13
PFW 16
Powr-Pak, Inc. 75
Precision Valve Corp. 14, 15
Prentiss Drug & Chemical Co. 32
Prepo Corp. 79
Puritan Aerosol Corp. 76

—R—

Rhodia, Inc. ..... May
Richford Corp. 57
Risdon Mfg. Co. ..... May
Roure-Dupont, Inc. 58

—S—

Schimmel & Co. 54
A. Schrader's Son Division Scovill Manufacturing Co. 6
Stalfort Pressure-Pak ..... 2nd Cover
Sterling Seal Co. 39
Sun-Lac, Inc. 75
John Struthers & Co., Ltd. 79
Synfleur Scientific Labs, Inc. 46

—T, U, V—

Thomas, H. Emerson Assoc. ..... May
Thomasson of Pa., Inc. 76
Tube Manifold Corp. 64
Union Carbide Chemicals Co. ..... May
U. S. Industrial Chemicals Div. National Distillers & Chem. Corp. 62
Valve Corp. of America 17
van Ameringen-Haebler, Div. International Flavors & Fragrances ..... 4th Cover

—W—

Western Filling Corp. 76
West Penn Mfg. & Supply Co. ..... May
Wheaton Plasti-Cote Co. ..... May
S. S. White Dental Mfg. Co. ..... May
Wisc. Alumni Res Foundation ..... May

Bassiri Joins Fleuroma Staff

Dr. T. Bassiri, internationally-known perfumer from France, has joined Fleuroma, Inc., New York creators of perfumes and aromatics, as a staff perfumer. A veteran of 23 years experience in the fields of chemistry, biology, and perfumery, Dr. Bassiri holds a doctorate, an engineering degree, and two master of science degrees. His papers have been published in perfume trade journals in France, England, Germany, and the United States.

Watson Named to Pond's Post

William C. Watson has been elected president of the International Division of Chesebrough-Pond's, Inc., New York cosmetics marketer. He is also a vice-president, treasurer and a director of Pond's.

OVER THE TRANSOM

THE CSMA has built up its membership to 440 firms, of which about 140 are "aerosol-oriented". Altogether, this total of 440 is a net gain from last year of 33 members. In case we haven't made our editorial position well enough known by this time, aerosol fillers in particular and all aerosol industry members in general would benefit mightily from membership in this association. The last few programs and the work of the Aerosol Division's Scientific Committee easily warrant participation by any company big enough to send a delegate to the two annual meetings.

* * *

The CSMA's Scientific Committee will make an effort to have the Federal Alcohol Tax Board change the current ruling on special denatured alcohol used in hair sprays and other aerosol products. It will point out that the regulation, which requires the addition of one-half ounce of perfume per gallon, is a bit on the high side and is in fact unverifiable by present measurement standards.

One of the most impressive and charming visitors to CSMA conventions in recent memory was M. N. Conville, managing director of Aerosol Packaging Co., Ltd., a leading British filler. Mr. Conville's refreshing frankness about filling problems in Britain, about the shortcomings of British and U.S. packaging components, and other aerosol topics provided a good many people at the convention with much interesting conversation.

* * *

Look for new recommendations soon from the CSMA on the labeling of products under four ounces. Present ICC regulations don't specify label warning for this type of container (which is why colognes, perfumes, pharmaceuticals, and similar packages haven't yet been burdened with the "full text" warning found on larger containers). But marketers have long been concerned about this shortcoming, pointing out that the smaller products can be just as dangerous as the larger ones if left over a heat source or if thrown into an incinerator.

"It seems his wife doesn't believe we have a bourbon spray!"

Remember that contest sponsored by Mondart Ltd. in which the winner was given a shovel, a wheelbarrow, and two minutes' time with a pile of silver worth £10,000. ($28,000). The winner, Derek Pryor of Hemel Hempstead, was able to haul away only £1400 ($3920).

* * *

Fleuroma Co., perfume materials and essential oils, last month were involved in a peculiar legal request. The company's new headquarters is located on Dreyer Ave., Long Island City, and Dreyer is the name of one of Fleuroma's chief competitors. Queens Borough President Clancy has appealed to the local councilman to introduce a bill in the City Council to change the name to either Fleuroma Ave. or Fragrance Ave., pointing out that such a name change would not adversely affect any other property.

* * *

With a view toward achieving a central location for its insecticide manufacturing, S. B. Penick & Co. is reported to be ready to move its entire insecticide operations to St. Louis. The company produces pyrethrum, synergists, and rotenone resins for aerosol insecticide formulation.

* * *

The new rush of artificial tanning agents to the market ("Man Tan", "Transation", "Magic Tan", "Tanorama", and "Tan Tone") may soon have an aerosol counterpart on the market. These dihydroxy acetone-based products are building up to a $10 to $15 million retail market.

* * *

Aerosol insecticides have hit the sports pages of national newspapers for the second time in less than a year. This time Jimmy Piersall, volatile outfielder of the Cleveland Indians, used a can of fly spray in the Chicago outfield after complaining about a heavy infestation of insects. The incident preceded a temper display by Piersall during which he threw gloves, bats and water bucket onto the field after being ejected from a May 30 doubleheader at Comiskey Park. Piersall has been having a feud with Bill Veeck, White Sox president, about the insects, fire-works spouting scoreboard, and the way he runs the ballpark.

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